

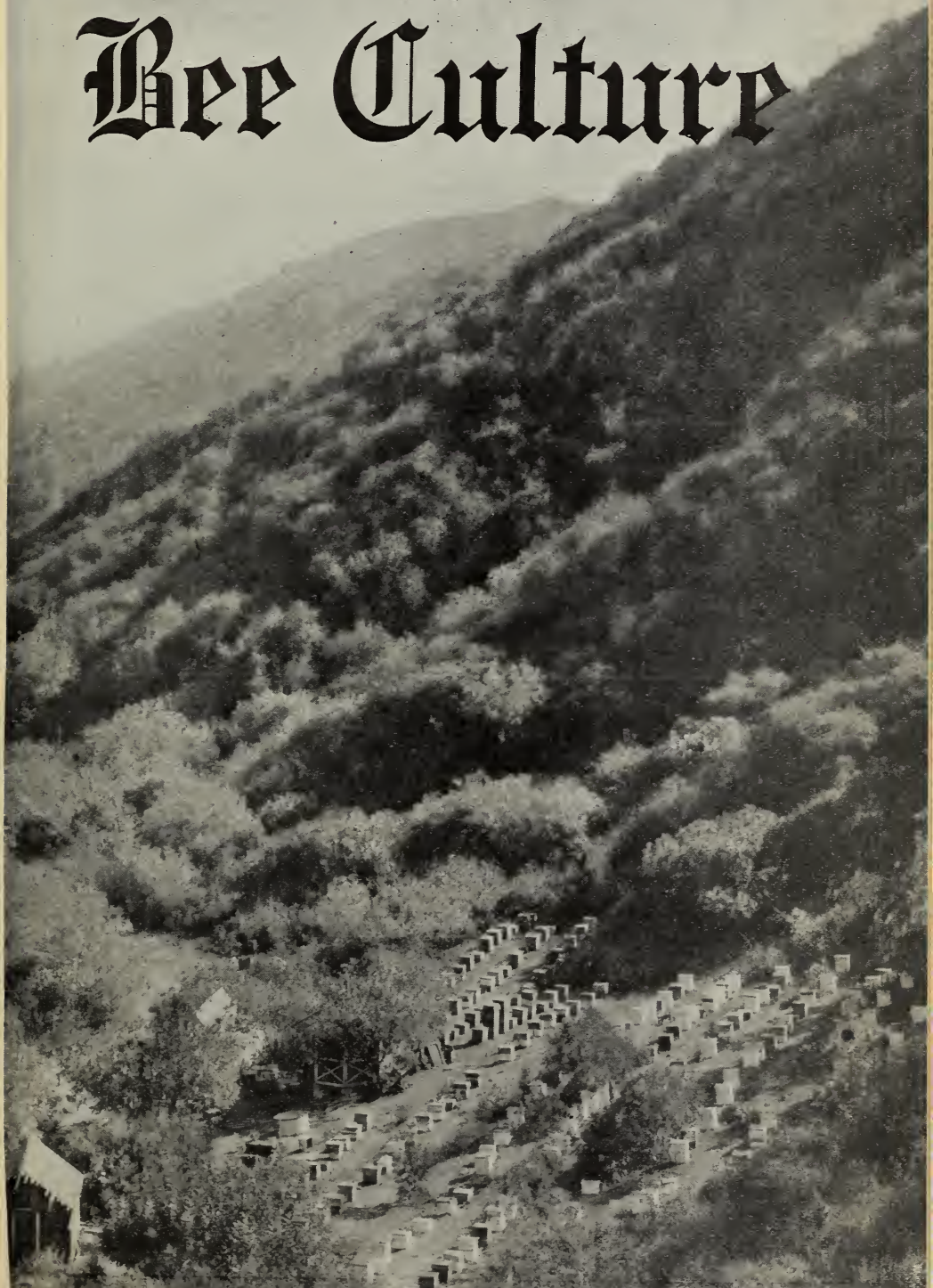
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AUG 7 1912



Gleanings in Bee Culture





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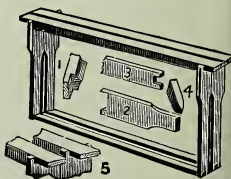
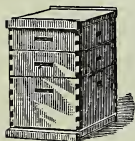
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MEDINA, OHIO



Cleanings in Bee Culture

Published by The A. I. Root Co., Medina, O.

H. H. ROOT, Assistant Editor.

E. R. ROOT, Editor.

A. L. BOYDEN, Advertising Manager

A. I. ROOT, Editor Home Department.

J. T. CALVERT, Business Manager.

Entered at the Postoffice, Medina, O., as Second-class matter.

VOL. XL

AUGUST 1, 1912

NO. 15

Editorial

THE FRONT COVER PAGE OF THIS ISSUE.

The front cover page of this issue shows a characteristic apiary seen on the mountain sides in California. The picture was originally taken by Mr. W. Z. Hutchinson. The locality is apparently one of mountain sage.

HONEY PROSPECTS.

THERE is not much to add to what we have already given on page 430 of our last issue, except to say this: Reports would indicate that clover has yielded tremendously in some large areas. Michigan is beginning to show some good reports. Illinois and Indiana continue to show that the season has not been very good. Reports from California are still unfavorable. Many letters show a lack of bees to gather the crop of clover where it is yielding well, and this fact will make a slight shortage in some localities.

A FREE BEE BOOK FOR TEXAS.

The Texas Department of Agriculture has just issued a bulletin on bees, entitled "Texas Beekeeping," by Louis H. Scholl. It is, in fact, a complete text book on the subject, for it comprises 142 pages about the size of this. We presume that all Texas beekeepers can obtain a copy free of charge. Apply to the Commissioner of Agriculture, Austin, Texas.

As nearly as we can judge from a rapid scanning of the pages here and there, the matter seems to be carefully and well written, particularly with reference to the conditions as they exist in Texas. The book is well illustrated, many of the cuts having been taken from this journal.

SOWING AND REAPING; WAITING FORTY YEARS FOR A CROP.

SOME of the old gray-headed veterans will remember the time when we got short of barrels to contain our extracted honey, and your humble servant borrowed the wash-tubs of the neighbors; and when these were all full we borrowed the wash-boilers.

Wash-day came, and the good women came around wanting their utensils. But there was no place to put the honey. Mrs. Root asked, "Oh! won't those bees *ever* stop bringing in basswood honey?" It was about ten years after the war, and new "extracted" honey was selling in Cleveland as a novelty for 25 cents per pound. I finally told "Sue" that we would pump the water out of the cistern and scrub it up nice and clean, and fill it with honey. Well, under the stimulus of this great yield of basswood and clover I scraped up money enough to purchase a ten-acre lot in which I planted 4000 basswood trees; and we have waited patiently *over forty years* to see if another such harvest from clover and basswood would come, and now we have it. Pretty close to ten tons of honey, both comb and extracted, have been taken off during the past three or four weeks. (The two carloads of bees from Florida have "paid the freight," anyway.) Praise God, from whom all blessings "flow;" and if you too, my friend, have also been getting a great "flow" of honey, can't you say amen to the above?—A. I. R.

ABSCONDING SWARMS; TRAPPING THEM BY MEANS OF DECOY HIVES, OIL OF ANISE, ETC.

AFTER the article and picture on page 482 was in press I recalled that the matter was already touched on in the A B C and X Y Z of Bee Culture, at the close of "Swarming." An instance is there mentioned of a beekeeper in California who secured 17 swarms by having his empty hives stacked up near the apiary.

In regard to the oil of anise, some years ago a fellow in the South was getting a lot of money by "selling secrets" for capturing swarms. So far as I can recall, his secret was oil of anise to attract the runaway swarms. Referring to the article on page 482, the writer says he never saw a swarm of bees until that spring; and then he states, as I understand it, that he and his

brother secured 72 swarms by putting out 75 boxes. There must have been a terrible stampede of runaway swarms just then in that section.—A. I. R.

HAVE THE QUEEN-BREEDERS OF THE COUNTRY BEEN DEFYING THE LAWS IN REFERENCE TO MAILING QUEENS?

REFERRING to the recent ruling of the Postoffice Department (see page 492), that all queen-bees sent through the mails shall have a certificate from the State inspector showing a clean bill of health, Mr. J. F. Crowder, of Pasadena, Cal., has this to say in the *California Cultivator* of July 4:

Until the postal department came to our relief, the queen-breeders paid no heed to the laws of the various States, many of which had very good ones; but owing to the leniency of the mails they had never taken the trouble to look them up, nor to see whether they were carrying on a legal business. They had been *defying* the law of this State for eleven years, as the law was amended in 1901, and in the editor of GLEANINGS' own State for eight years. Shipments of full hives or colonies could be made in conformity with the laws, but shipments where made through the mails were difficult to regulate until the department came to the relief.

Italics ours. A little further on, Mr. Crowder quotes what he supposes to be a copy of the Ohio foul-brood law, which the queen-breeders, including ourselves, he says, "defied." This law was repealed two years ago. It had always been a dead letter, for the reason that it did not make a proper provision for the payment of the salary and expenses of an inspector; and even if it had been operative it made no requirement that queen-bees sent by mail should have a certificate, or a copy of one, from the State inspector. But just as soon as an effective foul-brood law was passed in Ohio (and we believe the beekeepers of the State will acknowledge we had as much to do in getting it passed as any one), our apiary or apiaries where queens were reared were regularly inspected and a certificate granted. But the new law does not require a copy of the certificate to be sent out with every package of queens sent by mail, neither did the old one. We were not aware of the provision in the California law. We, therefore, do not understand why Mr. Crowder should make the charge that the queen-breeders of the country have been "defying" the laws of his State and of Ohio. The word *defy* means a willful act. If they or we were ignorant of the special provision of the California law, Mr. Crowder is grossly ignorant of the provisions of the Ohio law. Before he makes the serious charge he does, he should make sure he is quoting from the right law. It has been published in GLEANINGS as it now stands, pages 171 and 306, for 1910, and has been sent broadcast over the State.

Section 1155-7 of the new law referring to queen-breeders reads:

SECTION 1155-7. It shall be the duty of any person in the State of Ohio, who is engaged in the rearing of queen-bees for sale, to use honey in the making of candy for use in mailing-cages which has been boiled for at least thirty minutes. Any such person engaged in the rearing of queen-bees shall have his queen-rearing apiary or apiaries inspected at least twice each summer season; and on the discovery of the existence of any disease which is infectious or contagious in its nature, and injurious to bees in their egg, larval, pupal, or adult stages, said person shall at once cease to ship queen-bees from such diseased apiary until the inspector of apiaries shall declare the said apiary free from all disease. Any person engaged in the rearing of queens who violates the provisions of this section shall, on conviction thereof, be fined not less than one hundred dollars nor more than two hundred dollars.

We have always complied with the spirit and letter of both the old law and the new one, and yet Mr. Crowder says in closing:

Mr. Queenbreeder, have you been living up to the laws of these two States? I for one say no. Get right.

We join hands with Mr. Crowder in the desire to protect the industry, not only in his State, but in every State in the Union; but we think he is a little rough in his implied references, especially when he quotes the wrong law, and one that was always a dead letter.

EDUCATING BEEKEEPERS WHO DO NOT TAKE BEE JOURNALS ALONG THE LINE OF FOUL BROOD AND FOUL-BROOD INSPECTION.

REALIZING that comparatively few beekeepers see the discussions on diseases of bees in the various bee journals, and at the same time appreciating the need of education, especially in case of slipshod beekeepers, Mr. Norman Gute, of Owosso, Michigan, has had published in a local paper a series of five articles on foul brood, the titles of which are as follows:

- 1.—Contagiousness of the disease; its spread over Michigan and the United States; its ravages to bees and honey crop.
- 2.—Symptoms of the disease, and how to detect it.
- 3.—Cause of infection; precautionary measures to prevent spreading.
- 4.—Foul-brood laws of Michigan.
- 5.—The cure of foul brood.

We regard this as a step in advance, for the old-fashioned beekeepers are unquestionably the ones who spread the disease through carelessness, and it is just this class that it is hard to reach through the channel of the ordinary bee journal. We think it would be well for beekeepers in other localities to adopt this plan, where disease is spreading rapidly. The material for the articles can be taken from the various text books if necessary, or some local well-known beeman can write the articles in an interesting way. Mr. Gute is himself

a newspaper man, and he would doubtless be glad to furnish copies of the papers containing these articles to anybody who might wish them, providing stamps were sent to cover postage.

A good deal rests upon the man who writes the article. Lengthy, technical discussions will not be read by the careless beekeepers, for they are uninteresting. The article should be short and to the point, and should be written in a wideawake, interesting manner.

TEXAS AS A HONEY STATE.

THE *Texas Magazine* for May, an illustrated monthly, contains an exceptionally interesting and valuable article by William Harper Dean, Assistant State Entomologist under Prof. William Newell, State Entomologist and Chief State Foul-brood Inspector of Texas. We should like to reproduce the whole article, but space will permit us to make only a few extracts here and there that will speak for themselves.

He gapes his astonishment to learn that there are more than a quarter of a million colonies of bees in the State, and that their annual honey production is estimated to run upward of 7500 tons. *

The value of bees can in no wise be computed by the amount of wealth they create through their production of honey and wax, for without bees there would be imperfect pollination of blooms, consequently poor crops of fruit, truck, staple crops—ever failures. On the enormous alfalfa ranches of R. J. Smith, "The Alfalfa King" of Texas, you will find colonies of bees, for though Mr. Smith is not a beekeeper by profession he knows well that the little workers will pollinate the alfalfa blooms, assuring a good crop of seed and a table supplied with the choicest of sweets. * * * *

TEXAS HAS BEES ON 38,000 FARMS.

Some 38,000 farms in Texas keep bees. Many of these, the majority in fact, keep but a few colonies to fertilize the cultivated bloom and to supply honey for home consumption. There are a great many beekeepers who are professionals, relying well nigh exclusively upon their colonies as a source of income. But professional beekeeping is not a common find. Those who rise to this point do so only by the closest observation, the most painstaking methods, and good business management, as will be readily understood when one takes the trouble to investigate the depth of complex life in these little socialistic communities. * * * *

The Goliad Bee and Honey Company, of Goliad, last year operated 1050 colonies of bees which produced 42,050 pounds of honey and 300 pounds of wax. At Beeville, Mr. W. H. Laws operated 1200 colonies which stored 21,000 pounds of honey. But Mr. Laws is not primarily a honey-producer. His primary occupation is the rearing of queen bees for supplying other apiarists. At La Pryor, Zavalla County, Mr. J. E. Chambers harvested 70,000 pounds of honey and 800 pounds of wax from 1000 colonies of the little freebooters. In the light of these few instances "waste" hardly seems a fit nickname for shaparral. * * * *

BEE FACTS.

Uvalde County alone has more than 15,000 colonies of bees.

Texas honey is rarely found on the Northern markets; it is practically all consumed in the State, though some shipments are made to Oklahoma and other close points.

It is not an uncommon occurrence in Texas to see a whole car of bees shipped to some locality where a new apiary is to be started, or where the beekeeper wishes to increase his honey output without waiting for natural increase in the bees on hand. * * * *

Both Central and East Texas reap a titanic honey harvest from principally cotton and horsemint, the latter a wild, generally distributed plant which furnishes nectar for a deliciously flavored product. Here the rainfall is quite heavy, and we find the honey darker in color than that of the chaparral sections. Located in Williamson County is one of the bee and honey kings of the State, T. P. Robinson. Though he operates a considerably less number of colonies than many of his brother "kings"—800 to be specific—he took from them last season nearly thirty tons of extracted honey. His output during a good average year is about 80,000 pounds. A "bumper" crop would raise this to the neighborhood of 100,000 pounds. This man is perhaps one of the wealthiest beekeepers in the country. During the last ten years he figures a total income of \$100,000. "And," says Mr. Robinson, "I have made this wealth by creating wealth, not by trading and scalping"—a philosophy which carries with it something lasting and good for a heritage. * * * *

CONDITIONS SAME IN TWO EXTREMES.

Uvalde County is one of the greatest honey-producing counties in the State, relying principally upon huajilla, catsclaw, and mesquite—chaparral growth in semi-arid latitude. As far west as El Paso County the beekeeping industry yields abundant returns. At Clint, El Paso County, W. J. Stahmann last year managed 800 colonies. They stored a total surplus crop, over and above their own needs, of 83,000 pounds of honey and 300 pounds of wax. * * * *

SOME OF THE FAILURES AND SUCCESSES.

A novice in the art of beekeeping started out with thirty colonies of bees. At the end of his first season he took a surplus of 3000 pounds of honey and counted 110 colonies as the result of natural increase. This man gave his bees attention and kept them in modern frame hives.

One of the best-qualified beekeepers in Texas in discussing failure and success in this calling cited an instance in which a certain acquaintance of his farmed 200 acres. He loses money on cotton and pays all his expenses from the revenue of his bees. This man's custom is to work with his colonies two hours each day when he is "resting" from plowing.

In Waxahachie there lives a business man by the name of Mr. Tom Burlison. In 1910 he owned forty-one colonies of bees and kept them in the back yard of his home in the city. After business hours he found there was a world of relaxation and rest in attending to them. That year they averaged 100 pounds of honey and netted him exactly \$450.

Of course one must always take into consideration the fact that a poor season or a poor locality often means failure, but the man who studies his little corsairs and makes it his business to understand their habits and needs is better qualified to stand the attack of drouth and other setbacks than the man who puts his bees in a box hive and lets them stay untouched until he is ready to "rob" them.

IS A PROFITABLE SIDE LINE.

But if one has a reasonably good locality and season he should find it a profitable side line. Thousands do so, though it is a common thing to find a beekeeper who will tell you the venture does not pay in his particular locality and then in the very same section discover a man who will sign his name under the statement that beekeeping is profitable as a side line or a profession to the exclusion of other occupations.

For twenty-three years Mr. Z. S. Weaver has been a beekeeper. His home and apiaries are located at Courtney, Texas. During these years he has had two failures in the honey crop. For ten years his average production of surplus honey was 100 pounds extracted to the colony; for eleven years 75 pounds per colony. Mr. Weaver conducts a general merchandise business and says:

"I find that bees pay a better dividend than any investment I have ever made."

Mr. Weaver takes the best of care of his bees, and in return they do their very best for him.

The *Texas Magazine* is well illustrated and worth reading, especially by any one who contemplates going to Texas for a home. The price is \$1.50, published by the Texas Magazine Publishing Co., Houston, Texas.

Stray Straws

DR. C. C. MILLER, Marengo, Ill.

WHEN I READ, p. 375, that it remains to be seen how the fight for bee territory will be settled in California, I couldn't help thinking how much nicer it would be if pasturage for bees were owned the same as pasturage for cattle.

J. E. HAND has it about level as to swarm cells and supersedure cells, p. 267. Bees may start swarm cells, and then there's a let-up in the flow and they supersede; or they may start supersedure cells and a good flow comes on and they swarm. But they're the same cells in either case.

F. DUNDAS TODD writes that two years ago Henry Kacer, near the mouth of the Fraser River, B. C., took 400 pounds of honey from one colony, and netted \$72.00 for it! That would be \$7200 from 100 colonies. Looks like a scheme of that man Todd to cajole some of our best beekeepers across the line.

EDITOR HERROD, *British B. J.*, p. 53, advises beeway sections $4\frac{1}{4} \times 4\frac{1}{4} \times 1$ 15-16. Couldn't you concede that 1-16, Bro. Herrod, making the width $1\frac{7}{8}$, so as to keep company with your Yankee cousins? [Our British cousins use almost exclusively the sections referred to by Mr. Herrod. It is their standard. Why should they change their standard just to please their Yankee cousins?—ED.]

WHITE CLOVER still keeps at its best, July 13, and colonies may yet average better than usual. Even so, there will not be half a crop, for the bees are lacking to gather it. [If the clover season is as backward about developing in your locality as it was here, you may yet secure a crop of clover. It yielded here nearly three weeks before it made much of a showing. Then all at once it began to pour in.—ED.]

BEE-POISON is spoken of in GLEANINGS as formic acid; but Dr. Langer found that the poison was something separate and apart from formic acid, and latest research shows that formic acid is developed in honey by mere exposure to air. [This confirms the work of other investigators if we are correct. There has been altogether too much loose talk about formic acid in honey being derived from the bee-sting. We never had any patience with the old sting-browel theory; and the older we grow the less inclined we feel to accept any theory unless it comes from a well-trained scientific man who is also a practical beekeeper. Some of

our bee literature of the past is ridiculous in the light of modern scientific investigation.—ED.]

"IT IS QUITE an easy matter to have a lot of choice and vigorous queens reared by the time the swarming season begins," p. 380. I wonder if we could find out how generally that applies. How is it at Medina? In this locality I wouldn't give two cents apiece for queens reared thus early. [A good deal will depend on *when* the honey-flow comes on. It is possible to rear good queens before the honey-flow in Ohio, and, in fact, most of the Northern States. We venture to say that most of the Northern queen-breeders rear 25 per cent of their best queens before the main flow. You say you would not give two cents for early-reared queens. You possibly have in mind queens reared from cells built during chilly or cold weather, when the colony can not protect them properly. Such queens, if they live and lay, would not be worth much more than two cents; but in our locality we usually have conditions so we can raise the finest kind of queens, and have them laying before June 10 or 15, when our first flow comes on.—ED.]

ACCORDING to figures given by Alex. Astor, *L'Apiculteur*, 180, there are, in 1 lb. avoirdupois, 4536 young bees just born; 5040 field bees in April; 5465 field bees in May; 6043 robbers in time of dearth; 2926 gorged bees secreting wax. According to those two last items a bee may carry a trifle more than its own weight of honey. [Figures made by Profs. B. F. Koons, Lazenby, and Gillette do not altogether confirm those here given. They find that bees bringing in nectar run about 4000 to the pound, and empty bees a trifle over 5000. While the figures here given indicate that a bee *can* carry more than its own weight of honey, the figures made by Koons show that the most that a bee can carry would be half its own weight. On the other hand, we have seen a single bee carry away its own comrade; and if the honey-sac would distend enough it might carry its own weight of nectar. But while the bees can carry one of their own comrades in flight, it carries it only a short distance, and when it is fresh. But no bee could carry one of its own companions probably a mile or a mile and a half after having flown, we will say, a mile or more to get its load and then carry a weight equal to its own body.—ED.]

NOTES FROM CANADA

J. L. BYER, Mt. Joy, Ont.

Drouth is very severe in many sections of Ontario at this writing, and the honey crop will be greatly cut down on that account. Personally we are more than satisfied with results up to date, as we really expected little if any honey at the apiaries here in York Co.

* * *

That picture on page 406, where 11 colonies of bees are shown with over 100 lbs. per colony piled on them, and gathered from milkweed, forces one to the conclusion that the plant must be a great secreter of nectar. There is very little at our home yards; but at the one yard recently moved north we have abundance. It is just opening, and it would be a pleasant surprise if it were even half as generous in yielding nectar as it is in friend Kirkpatrick's locality.

* * *

When sending copy for July 1, I stated that, by the time my next lot of stuff was sent, we would know if friend Crane's prophecy as to a good honey crop was correct or not. Although, as we have said in previous issues, clover was extremely scarce in our locality this year, yet what little we had yielded well from June 24 till July 7, then shut down at once, owing to drouth and the very small acreage which was rapidly ripening. Strong colonies stored a nice surplus; but many colonies in Ontario this year were not ready for the flow when it came. This fact is gleaned from a lot of correspondence with beekeepers of the Province. Nearly all the honey came in during the afternoons, and from 2 till 7 the flow would be heavy. At this date, July 13, basswood is not open. What little we have looks well, as trees are very full of buds. At both my east and north yard the trees are plentiful, and we are hoping that basswoods will be in good humor this year and give us a crop.

* * *

E. W. Peirce's arguments for cheaper honey are readable, and on the face of it appear *reasonable* too. Briefly capitulated, they sum up about like this: More bees to be kept, better management, and, as a result, more honey can be sold cheaper than at present. That is all right, friend Peirce; but why not apply the same argument to all other produce as well? Get other things cheaper, and then honey can be sold cheaper too. But with steak around 25 cts. per pound, and all other food values in about

the same proportion, it is a poor time to ask the beekeeper to take a less price for his honey, particularly when there is a ready sale for all he can produce; and it is not a question of what we will give you for your honey, but, rather, a statement on the part of the producer as to what he wants and expects to get for it. My honey is sold already, though it is all on the hives ripening; and, needless to say, I got what I asked, although I might say that my price is subject to the price that will be recommended by the crop committee of the Ontario association, which has not as yet had its annual meeting. This may show a little what a benefit such a committee is, when large buyers have confidence enough in them to be willing to buy honey in big lots subject to their ruling.

* * *

During this past two weeks the writer of these notes has been just about busy running back and forth from one yard to another, trying to keep things in shape and to avoid losing any swarms. We have had very little swarming; and what we had was mostly caused by superseding queens, and in this respect old failing queens during the honey-flow are a great nuisance, as you hardly know how to treat a colony that is preparing to supersede their queen; that is, when the colony is at an outapiary and no one in charge. However, I had only one swarm to skip out, and that happened day before yesterday. The next day I was at the yard, and young queens were piping in great shape. I opened the broodnest and cut out about a dozen ripe cells, one queen being noticed as leaving the cell when I lifted out a comb. She ran down in the hive; and I thought that, after shaking all bees off combs and destroying every cell, no second swarming would take place—particularly so, as little honey was coming in. I closed the hive, and in less than ten minutes they swarmed, the swarm alighting in two clusters about 50 feet apart. As the old queen had been a good one, the two small swarms were hived for the sake of the young queens. They certainly had the swarming fever in bad shape, and I suppose that, when I went through the hive, a number of young queens hatched when the bees' attention was called away from guarding the cells; and with three or four virgins loose in the hive, it was a case of swarm at once or else give up the notion and let the queens fight it out.

BEEKEEPING IN CALIFORNIA

P. C. CHADWICK, Redlands, Cal.

There has, perhaps, never been a season in California that showed such spotted results, even in reach of the orange belt, where the bulk of the season's supply was secured. This is due very largely to the failure of the filaree to mature early enough to aid spring breeding, owing to the extreme dryness of the season up to March 1. A few apiaries in reach of filaree in irrigated sections, or where willow or other plants were available for an early supply of pollen, built up rapidly with good results. This only proves what I have previously said, that bees travel a much greater distance when there is some special attraction that excites the entire flight in one direction than they will where there is nothing more than pollen or a hard-earned load of nectar to be secured.

The following records begin on April 26, and were discontinued on May 2, owing to unfavorable weather and little progress being made by the bees. On May 13 the scales were moved to another colony, and records carefully kept until May 28. The object in this record was not so much to ascertain what the daily increase was as to test some theories of my own as well as those of others, though the former was a factor. The keeping of this daily record has in some respects been a revelation to me, and has disproven some ideas I had held almost as law, and decidedly upset some theories of others. I had always held to the idea that the orange yields most on moderately warm days—that is to say, those days when bees could fly freely, but when there was a lack of intense heat and direct sunshine. To my surprise the best record of any day was made with the temperature running up to 96 degrees at 2 P.M. The most ideal day, according to my previous notions, the temperature was about 75 degrees. The bees tumbled all over themselves in alighting, there being a constant stream crawling up the alighting-board where they missed the entrance; but the record this day was three pounds short of high-record day. So I learned that, when bees come in apparently over-laden with nectar, they are in reality no heavier laden than when the weather is sufficiently warm to enable them to alight promptly, but are retarded in flight by being more or less benumbed by cold nectar and air. The amount stored after 12:30 P.M. was double that of the forenoon, no matter how favor-

able the weather. The highest record of any day was 11½ lbs. Only 4 lbs. had been gathered up to 12:30 P.M. Another observation was that the heaviest gain was during the last ½ hours of the day; also that, during the first two hours of very favorable days, the shrinkage was often greater than the increase from the field. Arthur C. Miller says that the evaporation is greater up to 2 A.M. than during the remainder of the night. I find differently, in fact, under my observation the evaporation was continuous and nearly equal at all times, continuing until far in the forenoon on foggy mornings. The early morning flight to the field causes a noticeable decrease in weight, while at the day's end, with the retiring of the workers, it adds decidedly. On one cool cloudy day, when there was what seemed to be a fair flight, the evaporation of the previous day's heavy gain was actually four ounces more than was gathered all that day. My conclusion was that the evaporation is continuous until the final sealing of the cells.

I give below the weights taken during five successive days, with weather conditions for each day:

May 22, at daylight, weight 147 lbs.

May 22, at dusk, weight 155¼ lbs.

Gain for the day, 8¼ lbs.; partially cloudy, with cool west wind.

Daylight, May 23, 153¾ lbs.—a shrinkage of 1½ lbs. for the night.

Afternoon, May 23, weight 164½ lbs.—gain for the day, 10¾ lbs.; fine day.

May 24, daylight, 162½; shrinkage for night, 2 lbs.

At dusk, 173½ lbs.; day's gain, 11 lbs.; fine day.

May 25, daylight, 171¼ lbs.; shrinkage, 2¼ lbs. At 12:30 P.M., 170 lbs., showing a loss of 1¼ lbs. for morning. Dusk, 171 lbs.; loss for day ¼ lb.; cloudy, dull, cool, with fair flight during mid-day.

May 26, dawn, 169 lbs.; loss for night, 2 lbs.

Note that the loss for the previous day was ¼ lb., and previous night 2¼ lbs., or a total loss of 4½ lbs. for 48 hours. Though the flight on the 25th seemed to be fair, the weight did not come with it, indicating that the workers, after a short time in the field, returned more to warm up than because of being honey-laden.

Dusk, May 26, weight 177 lbs.—a gain for the day of 8 lbs.; cloudy, clear afternoon, with heavy flight forenoon.

Beekeeping Among the Rockies

WESLEY FOSTER, Boulder, Colo.

Just to show the variations and the different kinds of climate in the one State of Colorado, and the difficulty of getting an early crop report, consider that comb-honey supers have been put on hives and filled during October. This is done frequently in Montezuma Co. I have seen supers filled in May at Boulder. There is a variation of six months for the one State. Supers are not often taken off until August in Montezuma Co., and more came off in September than in August.

* * *

The premium list for the Kansas State fair is out, and includes \$200 in premiums for bees and honey. The premiums for honey-producing plants is the only class that is limited to Kansas exhibitors. Mr. J. P. Lucas, of Topeka, is superintendent of the bee and honey department, and is making an effort to have a good showing. If you are interested, write to Mr. Lucas and he will see that you get a premium list; and if you care to exhibit he will gladly welcome you.

* * *

THE SEASON SO FAR.

Frequent rains and abundant supplies of water for irrigation have made a fine showing on the alfalfa and sweet clover. The first cutting of alfalfa has made as high as three tons to the acre in the best fields. Rush of farm work has delayed many in cutting alfalfa, and the bees have had a chance. Sweet clover is now in bloom; and with a continuance of the showers we shall get honey between the blooming of the first and second growth of the alfalfa. Every wild flower yields honey this year; and the way the bees were swarming the first of July would lead one to remark that swarming sometimes is a problem in Colorado. Horsemint always yields abundantly when rains are copious, and the bees give their whereabouts away when working on the horsemint by coming in with the silver-colored pollen dusted over their backs. Colorado should make a good start at retrieving her winter losses this season, and we hope that a honey crop will be also forthcoming. To-day, July 7, the bees are entering the supers in a generous way, and a few finished sections have been taken off.

* * *

The Grand Junction fruitmen are adopting the layer pack, and have opened schools to teach the packers how to pack their fruit. This shows the trend of the grad-

ing problem. The apples will be counted, and the number stamped on the outside of the box. The Northwest is now grading apples for color, size, and shape; and the adoption of this new method by the Colorado fruitmen will mean practically the same thing. Here is a clipping from one of the dailies, *The Denver Post*, regarding the new move.

GROWERS ADOPT LAYER APPLE PACK; EACH BOX CONTAIN A CERTAIN NUMBER MARKED ON THE OUTSIDE.

The layer pack for apples has been adopted by the Grand Junction Fruit-growers' Association, and schools of instruction are being held at different points of Grand Valley, where the growers are shown the advantages.

By means of this new pack it is expected practically to revolutionize the fruit industry in this State. The chief advantage in the new standard, which will eventually be adopted all over the State, is the fact that the apples are layered and counted. Each box will contain a certain number of apples, which will be marked plainly on the outside. The purchaser, therefore, will be able, whether he is dealer or consumer, to ascertain just what he is buying when securing a box of Grand Valley apples.

Demonstrations of the new pack are being given daily by the inspectors of the association. The young women who do most of the packing will be given exact instruction as to how each apple must be placed in the box.

* * *

BEE-INSPECTION

Dr. Phillips says that it looked to him as though the two bee-inspection laws of Colorado were both in force. This was my opinion at first; but the intention of the legislature was doubtless to repeal the old law, and I think it is repealed by the new one. This does not hinder the county commissioners from paying the salary of a deputy county inspector, but takes the appointment out of the hands of the county judge. The beemen can reach the commissioner easier than the judge, and the commissioners feel better to have the say as to whom they will pay for doing the inspection. If the beemen take interest enough they can and do tell the commissioners whom they want for county deputy inspector, and the office of State entomologist has been able to co-operate with the selections made by the beemen and commissioners, and has commissioned them as deputies of the State entomologist, to whom they report, and under whose general direction they work. We want some changes in the law, but are getting some results as it is.

From reports already received, the percentage of foul brood has been materially reduced over last year's percentage in the counties of Mesa, Delta, Montrose, and Fremont. Other counties are to be heard from, and it is hoped that the reports will be equally good.

Conversations with Doolittle

At Borodino, New York

DRONES OUT OF SEASON.

Please give me a practical way of raising drones during a dearth of nectar. Then also tell how to care for them so the bees will not drive them out.
Nashville, Tenn.

W. F. MORRIS.

The first question is a hard one. When there comes such a dearth of nectar that all the drones are killed, especially if it comes at the close of the white-honey harvest, it is almost impossible to make any colony start to rearing drones again in this locality. The bees seem to know that no more drones are necessary for the remainder of the year, and, no matter how regularly or liberally we feed, the queen will not deposit eggs in drone comb, even if we make half the cells of the combs of that size. But, strange to say, should there come a yield of nectar from buckwheat three or four weeks later, the queen will lay in the drone-cells, as we often have swarms issue when there is a two or three weeks' yield from that source. But, as I said, we may feed as much as we please during the period when the buckwheat should secrete nectar, and it seems to have no effect on drone-rearing, even though the amount stored may be twice as great as though the honey were stored from buckwheat.

In some cases where the bees were bent on superseding their queen I have succeeded in having a few eggs laid in drone-cells by feeding in a time of dearth. The older the queen, the more drones will be reared; therefore if we try for drones out of season we must use old queens or those on the point of failing, even though young in years.

If there is a drone mother at an out-apiary, or one is taken with her colony three or four miles from home a week or two prior to the close of the main nectar flow, her drones may be made useful in the home apiary in this way: Take the bee-funnel and a box having queen-excluding metal on one side of it to this colony as soon as the flow from nectar ceases. Then look over the frames till the comb is found that the queen is on. Set this aside, and shake all the other frames in the funnel, so that the bees will "rattle" down through it into the box below. The combs do not have to be shaken very hard to dislodge drones, for they do not stick as tenaciously as do the workers. If there are many drones on the comb with the queen she can now be picked off and placed on one of the combs, when these can also be shaken down through the

funnel into the box. Now close the funnel hole in the box and place it near the entrance to the hive, having the queen-excluding metal so that the workers can run out near the entrance and into it, while you are getting the hive properly closed. A few workers should be left in the box to care for the drones on the way home; and when the right number remain, close the queen-excluder side with wire cloth.

Arriving home, take the box of drones to the prepared queenless colony; open the funnel hole of the box, turning that side of the box down over the frames, when the drones will run out into the queenless colony, where they will be at home till they are used for mating purposes or die of old age.

In order to have drones clear to the close of the queen-rearing season, I prefer the following: A day or two before the nectar flow has entirely ceased I go to the colonies having my best drone mothers, which were prepared for drone production at the opening of the season by giving two or more frames of drone comb, and take out these drone combs, substituting frames of worker comb. These will have more or less drone brood in them, from the egg to the maturing brood, if we do not wait till the flow ceases, and they should be set in the prepared queenless colony. In this way we gain from 24 to 28 days, having young vigorous drones all the way through. This colony having these drones and the drone brood must be kept *queenless* all the time after we select it for keeping drones; for with the great number of drones it will contain in proportion to the workers, the drones would be slaughtered on the least provocation when there is a dearth of nectar. I used to allow such a colony to rear and fertilize a queen; and as soon as she got to laying I took her out and gave another ripe cell; but as the season waned the bees would go to persecuting the drones as soon as the queen became fertile, even before she had laid an egg. Frames of sealed worker brood must be given this colony every two weeks to keep up sufficient force to care for the drones, and regular feeding resorted to, so that there will be a vigorous flight every fine day. If a two or three story hive is used, better results will be obtained, especially if the third story is filled with frames of sealed honey. A large colony *rich in stores*, and a daily "ration," will always give a vigorous flight at any time the queens can go out.

General Correspondence

AN EFFICIENT COMB-MELTER

Something to Sterilize the Honey as well as the Wax of Foul-broody Combs

BY WESLEY FOSTER.

Mr. R. W. Ensley, of Read, Colorado, operates about 700 colonies of bees in a district where foul brood is prevalent. In building up his apiaries he has bought many hives from his neighbors, and, as a result, has many old combs and diseased

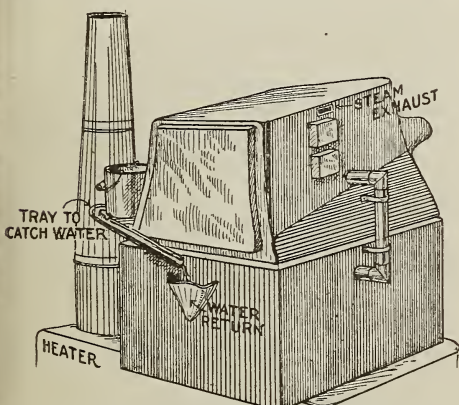


FIG. 1.—Back view of Ensley's comb-melter.

ones to melt up. One or two hundred hives of comb is not an unusual amount to be rendered during the year. Mr. Ensley designed and had built for him a comb-melter to render the honey and wax from these old combs. He wanted an apparatus that would separate the honey from the wax and leave both in good condition.

First he has a double boiler set over his furnace; then above this is the comb-melter proper, which is nothing more nor less than an alternating series of steam-chambers and comb-receiving chambers. The comb-chambers are about $2\frac{1}{2}$ inches high, 20 inches wide, and 30 or more long. Each comb-chamber will take three Hoffman frames at a time, and there are six in all. More can be added if wanted, by building the melter higher. The comb-chambers slope toward the back, the lower end of each being open so that the honey and wax can run off into the double boiler below. A piece of coarse screen wire across the lower end of each comb-chamber keeps the coarsest of the refuse from getting into the boiler. This refuse is raked out and run

through the wax-press. The fronts of the comb-chambers are closed with wooden drawers fitted with wire handles, and beveled so they will slip out easily.

The steam-chambers are all connected with live steam from the double boiler below by means of the pipe shown in the illustration. The steam passes into the lower steam-chamber (below the first comb-chamber), and on the opposite side is led out and up into the next higher space for steam, which is just below the second comb-chamber. The steam is led back and forth and up till the top is reached, where there is a hole by which the exhaust steam escapes. There is some condensation in each steam-chamber, and a small hole is made in the lower corner where this water can run out. Fig. 2 shows that these holes are all in line, and the water drips down upon a tray, and a trough leads back into a funnel feeding this water back into the double boiler. The condensation is not enough to keep up the water-level in the boiler, so a pail is placed on this tray, with a small hole in it, feeding water into the boiler as fast as needed. To prevent the steam from escaping from this hole a small cloth is placed into it, the water soaking through, but the steam does not come out. Of course, there would be trouble if the pressure were great; but heavy pressure is not necessary with an apparatus of this kind. The small boxes on the side of the melter are to carry the steam from one steam-chamber up past the comb-chamber to the next steam-chamber above.

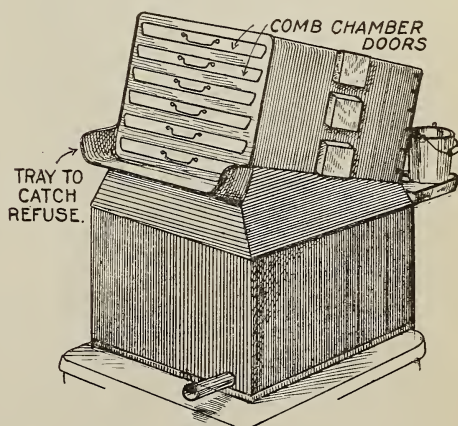


FIG. 2.—Front view, showing the doors to the comb-trays.

A tray is attached below the comb-chamber doors to catch the refuse when removing frames and raking out the chambers. The double boiler is tipped slightly forward and to the side upon which the faucet is

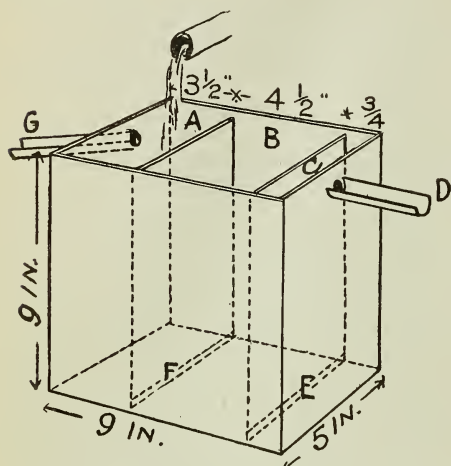


FIG. 3.—A, wax-compartment; B, first honey-compartment; C, second honey-compartment; D, honey-exit; E, honey-exit, opening into second part; F, honey-exit, opening into first part; G, wax-exit.

placed, facilitating the draining of the honey and wax. The comb-melter resting upon it slopes straight back level from side to side. I did not measure the drop, but I should judge that it is about three inches.

From the double boiler the honey and wax are drained off into a galvanized-iron wax and honey separator illustrated in Fig. 3. Mr. Ensley tells me that this honey and wax separator works well, but that the sides should be made sloping so that the wax cakes forming when the flow is stopped will be easily removed. The cost of this whole outfit was about thirty dollars. It was the first one he made, and he had to pay the tinnerns for the time they worked, and for the changes that were made that had not been counted upon. Another machine would not cost as much as this one.

The steam-chambers were first made, and the comb-chambers were formed by soldering on tin strips about three inches wide on the sides. The back was then closed with tin, and the front with the doors, etc.

Boulder, Col.

[We understand that the object of this melter is to save the honey. If the combs were in shape so that they could be run through a honey-extractor first, it is probable that a good wax-press would save time and would cost less besides. But the outfit here shown would sterilize the honey in the first place.—Ed.]

WOULD THE NATIONAL ASSOCIATION BE OF BENEFIT TO BEEKEEPERS OF CALIFORNIA?

BY P. C. CHADWICK.

On page 154 of the April issue of *The Beekeepers' Review* Editor Tyrrell takes a shot at our State Association. From the trend of his remarks Mr. Tyrrell seems to think the California Association is out after blood, and tells how he is receiving individual memberships that are being placed in other National branches outside of our State, and also how the National, if they can not get the support of local associations, will go calmly to work and organize their National members in that State.

It is a pretty easy matter to sit at a desk in Detroit and tell how all this work is going to be done; but doing it is another proposition; and if calmness prevails long I fear the editor's work would not progress very rapidly.

We have no fight on the National; and whenever it is shown that we can receive more for our money there than from our State Association we will surely be there. Personally I love the "Old National," and have no crow to pick with it; but I do not consider this talk about what big things the National is going to do as idle, from the simple fact that it is the consensus of opinion here that we have never received benefit commensurate with what we have paid in.

The men at the head of our State association have their work at heart, and have paid expenses from their own pockets, running into the hundreds, to get the beekeepers together in this State, and they are going to succeed so far as the progressive element of the State is concerned. My advice to the National is to keep hands off. When we get thoroughly organized; if the National can prove to us additional benefits we will not hesitate to come in; but threats will only make the breach wider and our return more impossible.

Redlands, Cal.

[We could not feel that Editor Tyrrell meant to cast any reflection on the beekeepers of California, and we therefore offered him the opportunity of replying to the foregoing, which opportunity he accepted, as shown by the following:]

Brother Chadwick, I wish I could answer your article by drawing my chair right up alongside yours and talking this matter over instead of putting it down in cold type. Somehow or other it is hard to get things in print just as I mean them.

If any thing I have said gives the impression that I am in any way against the

California Association, I want to say that I am sorry, for that is not the feeling I have. Far from that, I realize that every help should be given these different associations, and I realize the fact that they are doing a good work.

But you must not forget that I am serving the National Association; and as such servant I must advance its interests and that of its members wherever possible. Proper organization means a branch in every State; and if a State association said, "We won't join the National," you would hardly expect me to lie down and say, "It's no use trying to do a thing in that State." We must protect our members there the same as you do yours.

You are right in believing it is easier to sit at a desk in Detroit and tell how this work of organization is to be done than it is to do it. My twelve years' work along organization lines, from a local solicitor to general field manager for a farmers' organization now numbering 70,000, proves this. But, friend Chadwick, it can be done; and the fact that many think it can not makes the work that much more interesting.

After all, I believe we are together in our desires, even should we differ in the methods. Both you and I would like to see your State association prosper. Both of us would like to see the National prosper. And I believe we both agree that, if the California State and National could be pulling together in double harness, neither taking from the other but rather adding to, a great deal more good would come of it than for either or both to travel alone. Then why can't they?

Detroit, Mich.

E. B. TYRRELL.

BULK-COMB-HONEY-PRODUCTION POSSIBLE FOR NORTHERN BEEKEEPERS

BY J. J. WILDER

I have enough tangling and knotty problems to solve in beekeeping in my own part of the country without soaring away to the North, and there trying to help the beekeepers over their rough places; but allow me to offer a few suggestions that might make bulk-comb-honey production possible in the North as well as here.

The greatest fear seems to be that honey thus packed would soon granulate, or candy, and that there would be no demand for it in this condition. This would certainly be the case, for it is true that in the South we have no market for such an article, and perhaps never shall have. Such honey must keep in a liquid state until it is sold and

consumed — that is, the extracted honey which is poured in around the comb honey to fill the package and make it uniform in weight. Now, if this extracted honey would retain its liquid state the chunks of comb honey packed in it would not granulate or candy; and all the contents of the package would remain liquid and transparent. It would be, in fact, a very attractive package, bringing the highest possible price in any honey market.

Now, it would take a fancy article of extracted honey (and of a good mild flavor too) to pack up the light comb honey of the North as bulk comb honey, else it would spoil it; and I am not familiar enough with the honeys of the North to know whether there is such an article of extracted honey produced there that would not candy or granulate. If not, this would be another great obstacle in the way; but this could be averted by obtaining it from other beekeepers in other sections of the United States. It could be bought at the prevailing prices of extracted honey, transportation charges paid, and packed with comb honey would bring on the market the prevailing prices of comb honey, which would net the buyer a good profit after these expenses. If it were desired to pack up an off grade of comb honey into bulk comb honey in cans and pails, an off grade of suitable extracted honey could be obtained for this purpose.

The question might be asked, "Could a sufficient amount of suitable extracted honey be obtained for this purpose?"

I will answer yes. If the comb honey is packed properly in the proper size of jars it would not take much extracted honey to pack up a lot of comb honey. I have tried all sizes and kinds of vessels for packing bulk comb honey in for a number of years; and I have found the pint or 24-oz. Mason fruit-jars of the flint variety the best all-around package for packing up fancy honey in this manner. These jars are just as high as a comb of honey cut from a regular shallow extracting-frame is wide; and all that is necessary is to cut it across the proper width, which should be nearly as wide as the mouth of the jar; and when two of the pieces thus cut are placed in properly there is not much room for the extracted honey, and therefore a small amount of honey would go a long way. And it could be packed in cans and pails of a suitable height, in a similar manner.

But coming closer to the supply of suitable extracted honey, and how to obtain it, in our great Southeast there are many beekeepers located in the tupelo-gum regions who make a specialty of producing extract-

ed honey from this plant, and carloads of it are put on the market each season packed mostly in 30-gallon barrels. This honey is in every particular suitable for the purpose, and the bulk-comb-honey producer of the North could get in touch with the producers of this honey, and contract with them for so many barrels each season to pack up their honey in. There is no question about this honey being suitable for the purpose, for I have been using it for a number of years with perfect satisfaction. Our honey from the cotton plant is quick to granulate if extracted, and will gradually do so in the comb as cold weather comes on; but if it is packed in tupelo honey it will not. I have a jar of it which I have had packed for several seasons, and it has been in my refrigerator now for several weeks, and it shows no signs of granulation, but remains clear and transparent. I don't know whether the test is severe enough; but I believe it will stand any climate almost indefinitely and not granulate. No doubt beekeepers in other sections of the United States produce a similar article that would be equally satisfactory, which could be obtained for the same purpose and in the same manner.

Cordele, Ga.

To be continued.

MUTABILITY OF THE DOMESTICATED BEE

Parthenogenesis Should Prove Helpful

BY LEO ELLIS GATELEY

I was asked recently if, during the past half-century in which we have been importing Italian bees, any thing has been gained above the regular strain. Replying to that, I beg to say that, in respect to the *possibilities* of breeding, a great deal has been gained. While the yellow bees of this country in general fall below the average compared to the darker bee it is, without any doubt, the result of faulty breeding. The original strain has for many years been kept in large apiaries devoted to honey production, and bred accordingly. Extra-yellow bees have been confined to less extensive apiaries devoted to queen-rearing, and selection in breeding made for color alone. By taking this bee as it is, and improving it along general lines, it would soon equal the strain from which it originated. The important fact, however, in regard to the goldens is that it marks clearly an epoch in bee improvement, and illus-

trates the mutableness of the species. In condemning this strain for points upon which it has not been bred, beekeepers apparently fail to realize that, while the older countries from which the bee was introduced into America are still content to keep the same old varieties of that period, we have developed a new and distinct type. It is a deplorable fact, that just how the development of this American product was begun and carried out is not on record, but was doubtless accomplished through a long course of selecting highly colored mutations for breeding stock. The modesty and simplicity of American queen-breeders is exemplified, also, by the fact that this product of unrecorded thought and painstaking is a nameless quantity, satisfied to appear under such impressive titles as "Golden," "Beauties," "Nutmeg," "Five-banders," and "Golden-all-over." Nevertheless, the development of this distinctive strain but emphasizes the mutability of the Italian bee, of which there has never existed reasonable grounds for doubt.

In the opinion of some, the parthenogenetic development of drones will prove an obstacle to progress in breeding for improvement. Parthenogenesis should be incalculably helpful in so much that relief is here found from having to see that all drone-producing queens are purely mated. Were it not for parthenogenesis the task of breeding would be indeed complicated; for if any of our young queens should prove to be mismated it would work havoc with our breeding operations. Let us be thankful, then, that we have this invaluable aid, found absent in the breeding of other live stock. Though the mating of queens has many difficult points, one can, in the average locality, control the flight of drones to an extent that, for all practical purposes, there will be no haphazard mating.

Unquestionably the one real bar to progress is in making intelligent selection of breeding queens. The few who take adequate interest in breeding bees fail to realize the necessity of seeking improvement along general lines; and colonies are so deceptive at honey-storing that only by possessing a clear understanding of how outside conditions affect the amount of surplus gathered can one make judicious choice. The colony storing the least yield may, under certain circumstances, be the one most desirable when breeding for honey; and that producing the enormous yield, if it is not a black or hybrid one, may result in any thing but a mutation in the sense expected.

Ft. Smith, Ark.



F. B. Cavanagh's two-cylinder Jackson automobile, with the carrying rack at one side, the latter being tipped over so as to give a top view.

CONSTRUCTION OF THE AUTOMOBILE TRAILER

BY F. B. CAVANAGH.

In response to inquiries regarding my auto and its different sets of "harness" I wish to give the following description:

Fig. 1 shows the machine with a top view of the carrying rack, which was placed on its side at the rear. The back fenders must be removed for use with either trailer or rack, both being built out over the rear wheels. The projecting side-boards of the rack also extend forward and form extra seats when we have a five-passenger load. This rack could be improved by making it about 18 inches longer, and building wide double doors in place of the narrow door which, as shown in the photo, is propped up with a stick.

This picture is shown for the purpose of making clear to the reader the means of connecting the trailer to the auto. This connection must, of course, be very flexible, both laterally and longitudinally, otherwise difficulties would arise when driving on uneven ground.

The drawbar, or "fifth wheel," if we may call it that, for lack of a better name, is built on a 2x6 secured with four bolts which extend through the frame of the automobile, and which are easily removable. In the middle of this piece is a one-inch piece with a V-shaped slot cut out and covered with a solid plate of steel $\frac{3}{8}$ inch thick. This plate draws the trailer with the $\frac{3}{4}$ inch steel bolt which is shown in Fig. 2, and extends in order through the crosspiece of the

trailer, the steel plate, the reach of the trailer, and finally the automobile deck, where it is secured with a $\frac{3}{8}$ bolt and nut.

The hole is made large in the deck of the auto and in the 2x6, to allow flexibility in all directions. It will be observed that the pulling tension is all on the steel plate with the auto and with the trailer jointly, from the reach and the $\frac{3}{4}$ -inch machine-steel kingbolt. Lateral stability is secured by contact with an upper plate on the cross-piece of the trailer, corresponding in size to the lower one. These parts must be made of the best material, and must be strongly built.

Fig. 2 shows the trailer reared up to give the reader a general idea of the construction. Two strong carriage wheels and springs of suitable weight are required. The reach extends upward at an angle to within a foot of the connection to which it enters on a parallel with both trailer and auto decks. The 2x4's supporting the deck are about 11½ ft. long, and crosspieces are 1¼x5x6½ ft. long, and of white pine. The deck is tongued and grooved, $\frac{5}{8}$ inch yellow pine. A strip of $\frac{3}{4}$ x4 pine is nailed to the edge, forming a 1½-inch ledge when used for hauling. The iron loops around the edge hold the cover, which is used in hauling bees and to hold the wire-cloth canvas trailer top.

Those who have seen the picture on page 500, Aug. 15, 1911, showing the trailer with a load of supers, will understand how the top is connected to the two-foot wire-screen framework. A canvas cover with ample windows on each side is secured by strips



Cavanagh's automobile trailer. View from under side.

nailed all around the upper edge of the screen framework. A light frame with gable top is hinged at each end to the screen frame so as to swing toward the center when the top is collapsed for traveling. When extracting, the ends are held upright with removable braces at each corner, and the cover stretched in position. It will be observed that, if the ends were hinged directly to the trailer deck, instead of to a two-foot stationary frame, there would not be room for the top to be folded down flat on the machinery.

Hebron, Ind.

SELLING HONEY DIRECT TO THE CONSUMER

Should the Selling Price be Increased to Meet the Growing Demand?

BY HARRY LATHROP

In an editorial, page 35, Jan. 15, I note the following: "But the scarcity of comb honey and its higher price should make producers wake up to the importance of

producing more section honey." Present conditions would not seem to justify me in changing from the production of extracted to that of comb honey. My extracted honey nets me 10 cents, and is sold at that price direct to consumers, or to merchants or distributors. I am unable to secure more stock, even at 9 cents in job lots delivered here; and having sold out I must tell my customers that I am unable to fill orders before the new crop comes in. I have a letter from President York in which he advises me that some lots of fine comb honey are being sold in Chicago at 12½ to 13 cents. Those prices do not look good to me in view of the fact that I can not buy western white extracted honey in that city at less than 9 or 9½ cents. We ought to work toward uniformity of price and a stable market for our product. I advocate

selling direct to consumers, and at as low a price, or as near first cost, as possible. This will increase the consumption of honey, and make it a popular food, as it deserves to be.

I will explain why I ask jobbers or merchants one dollar a pail for a ten-pound package, the same as the one who buys only one pail. If a customer comes to me for a single pail of honey I hand it to him and take his dollar. I have no boxing to do, no shipping, and many times do not even put a label on it. He gets the honey at a wholesale price by coming after it. If a customer writes for a single pail by express he incloses one dollar. The express charges on the honey will be 35 cents. This leaves a margin for the distributor or merchant who will buy by the dozen and have the honey shipped by freight. When I am asked to make a lower price on lots I tell the purchaser to make his own selling price and get his profit out of the consumer, and not out of me. There may be some weak points in this method, but I can't see where it is unfair to any one. True, it gives my home

customers the advantage of a minimum price, and that is what I want. I wish to sell as much around home as I possibly can. If I could sell it all at home I would not ship any to help glut distant markets. My honey nets 10 cents, as the pail is weighed in.

I made only one mistake in my management, as I see it, the past season. I sold 3000 lbs. of amber fall extracted to a cracker-factory at 7 cents on cars at my station, and lost the cans in which it was stored. I reserved a thousand pounds of the same honey, and sold it out the same as the white at ten cents net. I find quite a number of customers who prefer this amber honey straight. Others think that a blend of half white and half amber is just right. This latter is, indeed, a very pleasing honey, and I believe we have no need to take a greatly reduced price for a good quality of amber honey from heartsease and the general autumn flowers of the middle States.

I think it is a good thing to discuss prices and to let each other know what we are doing. I have reached a point where I must either keep more bees and produce more honey to supply my growing trade or raise my price in order to cut some of it off. I can't buy honey at a price that would allow

me to make any thing for the trouble of re-packing and selling—at least not this season. I know that farmers would raise the price of eggs to one dollar a dozen if there was a scarcity and they could get that much; but I don't feel like raising the price of honey in that way, nor do I believe it would be good policy. Tell me, if you can, editors or readers, what would be the best thing to do.

Bridgeport, Wis., Feb. 7.

DINE'S METHOD OF RAISING QUEENS

Where the Scheme Originated

BY I. HOPKINS.

Under the above heading there appeared in the *Canadian Bee Journal* for March last, page 75, an article by Mr. Oscar Dines, on the plan he has adopted for raising queen-cells, and also an editorial introduction to the article, in which it is claimed that Mr. Dines is the originator of the method. The plan is also described by Mr. Holtermann in *GLEANINGS* for March 15, page 177, Mr. Dines' experience being given as set out by himself.

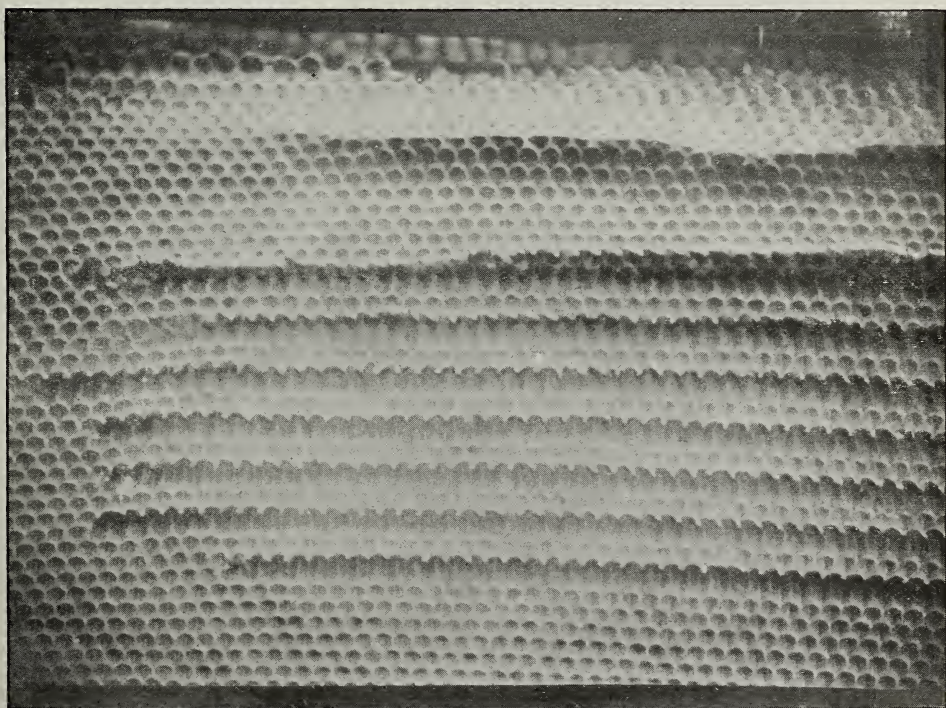


FIG. 1.—Portion of comb prepared for cell-building in New Zealand.

Now, it is not often that American editors are caught napping; but I think I can prove that they do indulge in a nap sometimes, and that Editor Hurley, of the *Canadian Bee Journal*, must have been sleeping soundly when he wrote that editorial or he would certainly have known where the scheme really had its origin, which was neither in America nor Canada.

SCHEME FIRST ADOPTED IN NEW ZEALAND

AMONG ENGLISH-SPEAKING PEOPLE.

Although not the originator, I believe I was the first to adopt the method among English-speaking beekeepers. During the season of 1909 I made my first attempt at one of our state apiaries, which resulted in 60 fine cells, and on the second venture 80 grand ones were obtained. I took photos of both combs (one of each of which I am sending you); but as they were taken in a very bad light, inside, to avoid draft, they are not very clear. Being a staunch advocate of the Alley plan of raising queens, the method appealed to me, and we still carry it out in the government apiary.

On October 23, 1909, I wrote Dr. E. F. Phillips, giving him a brief description of the method, telling him where I got it, and sent him a photo of the first batch of cells. He afterward informed me that he had explained the system before, I think, the New

York convention of beekeepers. In the August number of the *New Zealand Farmer* for 1910 (which you, Mr. Editor, may have in your files) I published the process in full, with illustrations; and when revising for the fifth edition of my "Australian Bee Manual" in June, 1910, I included it, so that the method, though apparently having failed to reach the majority of beekeepers in America, has been well ventilated in this part of the world for over two years and a half.

Possibly Dr. Phillips may have forestalled me in this matter; but as I am ignorant whether he has or not, I can not be blamed for repetition if he has. I hope Editor Hurley will not get too great a shock when I tell him that it was out of his own journal for July, 1909, page 255, I got the information, contributed, I think, by Jacob Habera, or Habbera, and translated from an Austrian bee journal. This, I think, will clear up the mystery.

THE PRACTICAL USEFULNESS OF THE METHOD

You, Mr. Editor (page 178, March 15), express a doubt about its being wise to allow more than two dozen cells to be attended to in one colony. That was about the number I considered enough at one time; but more mature experience has convinced me that a strong two or three story

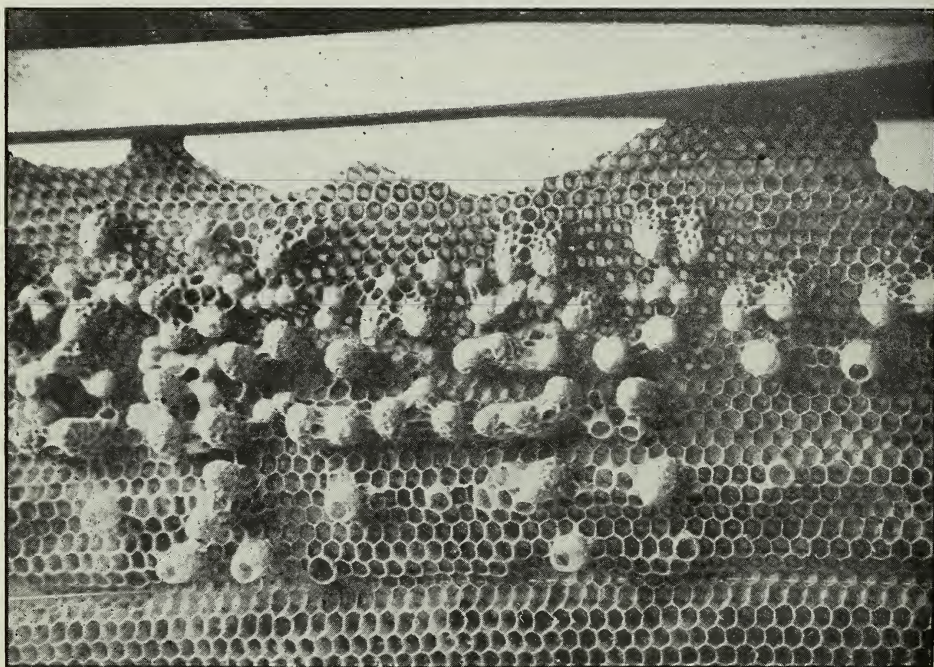


FIG. 2.—Sixty good cells obtained on this comb at the first attempt. First week in October, 1909.

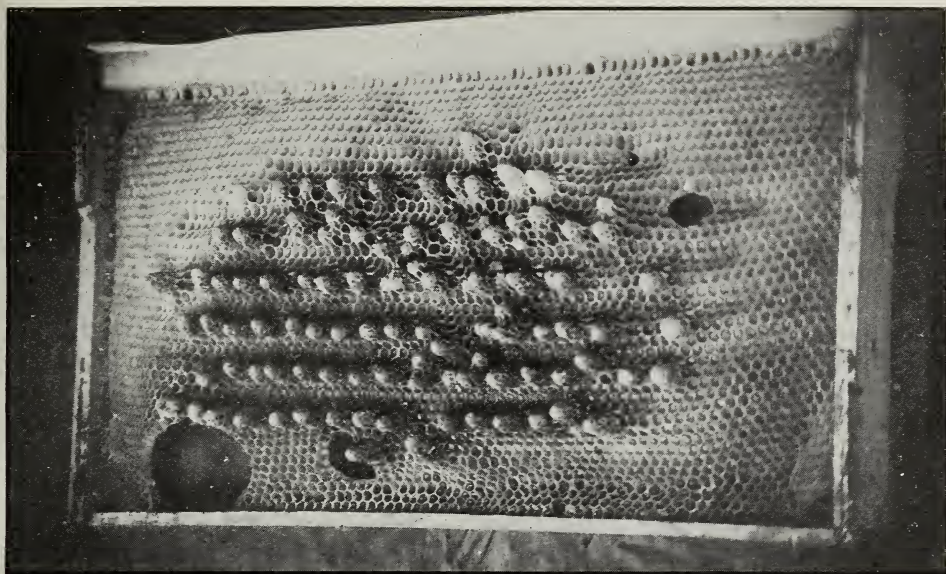


FIG. 3.—Eighty good cells—second attempt, second week in October, 1909.

colony, overflowing with bees, with many thousands of nurse bees, and plenty emerging every day, deprived of all unsealed brood, can readily attend to and bring to maturity more than twice that number (as I have abundantly proved) of first-class queen-cells. All our cells at the government apiaries are raised in such colonies. I never did believe in the "swarm-box" and small-colony system of raising queen-cells.

Mr. Dines describes his plan of supporting the frame of comb in a horizontal position, the trouble connected with which seems to me unnecessary. All we do is to lay an empty frame on its flat, over the lower frames; place the frame of comb on this; cover the latter with a light mat; put on an empty half-story, and the top box or boxes above it. In four or five days we return the queen to the brood-chamber; place on a queen-excluder above, and the cells and top boxes as before.

PREPARING THE COMB FOR CELLS.

I prefer a last season's built comb that has been bred in, after getting it well filled with eggs from one of my breeding queens in the usual way. I cut down on one side to the midrib on each side of every fourth row of cells with a thin budding-knife, and scoop out the three intermediate rows with a broad bradawl; then one out of every three eggs in the rows is left, and the others killed with a splint that has been dipped into wax. I don't touch the other side of the comb. In very hot weather the

comb may need a center support. Securing such a large number of cells, one can well afford to discard any that appear to be below a high standard.

Auckland, New Zealand.

[Dr. E. F. Phillips, of the Bureau of Entomology, after seeing our footnote calling attention to the similarity of this plan to the Alley method, stated that he obtained it from Mr. I. Hopkins, of Australia. He thought so well of it that he placed it before the beekeepers of the New York State convention some two or three years ago.

While we admit that as many as eighty or a hundred good cells *may* be secured in one batch, experience in rearing thousands of queens every season has shown us that it is better not to try to raise over two dozen at a time. One may suppose that the cells are all good; but our experience seems to indicate that queens raised from the cells where so many are built at a time are likely to be short-lived. We *can* raise a hundred cells in a batch—have done it time and again, years ago.

There may be some advantages in the method here described, particularly for beginners and professional honey-producers who have not the time to learn the intricacies of the art of raising cells by the grafting plan in wooden cell cups; but our men who raise queens by the thousand say the other plan is too slow. But we are going to get them to try it over, following very carefully Mr. Hopkins' directions as here given. We will report results.—ED.]

A SWARM CAUGHT BY THE USE OF OIL OF ANISE

BY EDWIN A. SMITH

My brother and I once caught 76 swarms in one month. We take any kind of box that will hold frames, put starters in them, then put the prepared boxes in trees. We put a drop of oil or anise in the box long before a swarm finds the place.

I never saw a swarm of bees until last spring. When my brother and I started, we thought we would try it, so we put out boxes and caught 72 swarms. We sold \$136 worth of comb honey, then sold the bees, and started in new last month. California is the place to catch runaway bees.

I get the oil of anise at a drugstore. Before I start out I put a drop or two of anise in the box, then I locate the boxes in trees, under brush, or any place where the sun doesn't strike them in the heat of the day. I can catch twelve swarms by the use of anise where I could catch only one

without. Last year I put out boxes without any thing in them but the anise, and caught 72 swarms out of 75. I look at the boxes every week, and in those that have no bees I put another drop of the anise on the alighting-board.

Whittier, Cal.

[The use of oil of anise is mentioned in the A B C book, under the head of "Bee-hunting." I have used it, but did not find it of more benefit than burning combs, etc. As the perfume from the anise, however, would last for several hours, and perhaps days, it would be an advantage for the decoy.—A. I. R.]

SOME CALAMITIES IN THE APIARY

Flood and Suffocation

BY E. F. ATWATER

The first serious mishap which occurred among our bees was in 1905, when, in addition to a crop failure, an entire yard was almost destroyed by water. This apiary was located in a bend of an irrigation canal, where it was a little low; but as the ground was dry, and had never been irrigated, we did not even have the entire yard on the four-inch Miller stands which we were using at that time. Just as the flow was due we visited that yard, and were greeted by a stench not unlike that from foul brood, and almost overpowering in its intensity. Upon examination we found that almost every colony had suffered severely, while some were dead. During the night a rancher had turned into this canal 400 inches more water than it was built to carry, and the overflow came to our apiary. The weather was warm, the colonies strong, so that every tight hive had its entrance closed by the water. The bees had all but suffocated, and the brood was scalded by the confined



A large swarm caught by the use of a little oil of anise in a box located in a tree.



One of E. F. Atwater's yards, Meridian, Idaho, that was practically destroyed by fire started by a spark from a passing train.

heat. The colonies in hives that were old and gaping were but little injured.

Another experience which is little less than a calamity is when an entire yard must be shaken for foul brood. This has happened twice in our 16 years of beekeeping.

In June, 1909, a spark from a passing train ignited the grass in our Taylor yard. The tenants on the ranch fought the fire as best they could, so that we lost but few colonies outright, though a large part of the field force was burned as they came in from the fields and tried to enter their hives. Where there were open ventilators the flames sucked in at the entrances and up like a chimney. Part of the debris is shown in the picture. The three children standing at the left are the son and two daughters of the good German tenants who took an active part in fighting the flames. Notice the utilitarian costume of the two girls.

In March, 1910, we were hurriedly called to the phone and informed that our Bennett yard was fast being flooded. It was almost night, but we secured help and drove to within a mile of the yard, where the road became a torrent of icy water, with an ice-jam just below. Here we left our team and took to the track of the electric railway, and finally arrived at the yard where the water raged, from a few inches to two feet deep.

The wintering sheds were demolished, tar paper torn away, and, leaving one colony in the water, two or three were piled on top over the entire yard. As we lifted each hive, gallons of icy water poured out of the

entrance and down my clothes as I handled the front ends of the hives. After we piled up the entire yard in this manner we went back to our team where we partially dried our clothes over a fire and drove home.

The results were surprising. The flood abated soon after we left the yard, and only one colony was lost outright; and as there was but little brood at that time, the yard built up and yielded a normal crop. We found that the water simply drove the bees to the top of the hives (part were two-story), and if any little opening was found in quilt or cover, a part of the bees would be quietly clustered on the outside of the hives.

Meridian, Idaho.

CLIPPED QUEENS AND ARTIFICIAL SWARMING

A Clipped Queen that Lived to be Eight Years Old

BY J. W. NICHOLS.

Having been interested in the articles on clipped queens by H. E. Harrington, p. 143, March 1, and by Harry Lathrop, p. 285, May 1, I wish to add a word in line with what Mr. Lathrop has said. While I am a beekeeper in only a small way I have clipped queens for fifteen years, and have always been successful. Unlike Mr. Lathrop, however, I clip both wings on both sides short, so that, when a swarm issues, the queen will not leave the entrance-board, but will be found in front of the hive where she can be easily caged, and the hive exchanged for a new one, ready for the re-

turn of the swarm, which occurs soon after they find themselves without a queen.

I think that, in many cases, the disposition to swarm is clipped with the wings. I once clipped a two-year-old queen that lived and worked for six seasons, without taking out a swarm or having a queen-cell built. She worked seven seasons with her own bees—two seasons unclipped and five seasons clipped—and in the eighth season she was put with a weak stand; and in July, after they were strong, she died of old age. Can Mr. Harrington tell why those bees did not discover in all those years that she was maimed?

I clip my queens in the queen-rearing hive, and introduce them clipped and without caging. Caging queens in the hive belongs to the methods of the past.

I cage the queen in the afternoon, and leave the cage on the frames of the small hive; then, after sundown (always), when the field workers are all in, I take the queen in the cage to the large hive; open it, and give the bees a little smoke; then let the queen run down with the bees, shut the hive, and do not open it for three days. The queen then will be safe. I have not lost a queen, introduced by this plan, for ten years.

TWO PLANS FOR MAKING ARTIFICIAL SWARMS.

I am not a lover of natural swarming, so I clip all my queens, cut queen-cells, and make my swarms artificially by two plans. The first is old, and the most simple, and is one which I use only after the honey-flow is in, which is usually some time in July. At nine o'clock some fine morning, when the field workers are beginning to come in, I take from a strong stand a frame of brood having fresh eggs, paying no attention to the queen, and place it in a hive with seven frames filled with full sheets of foundation, putting one frame with foundation in the old hive in place of the frame I have taken out. Then I remove the old hive to a new stand, and place the new one on the old stand in time to catch the field workers. If the queen is left in the old hive she will have no disposition to swarm when robbed of her bees, and will destroy the queen-cells, if there are any. If she is in the new hive on the old stand, the first young queen out in the old hive will do the same.

With the other plan, which I now use the most, I do not disturb the working colonies. Early in the season, as soon as there are drones, I take four queen-rearing hives that hold three brood-frames each, dividing among them the frames from an eight-frame colony, giving each hive one frame having fresh eggs. I then put in each hive a third frame having comb or foundation. The old

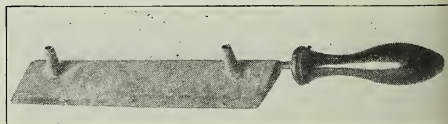
queen will be in one of the four hives. When the other three parts of the colony find themselves queenless they will build queen-cells and rear a queen for themselves. As soon as the old queen has the three-frame hive filled so that she wants more room I place her in an eight-frame hive having five frames of foundation. When the queens in the other three hives have hatched, mated, are laying, and want more room, I place them also in eight-frame hives having five frames of foundation. By this plan I disturb only one colony and add three; but if I have a colony that has the swarming fever and will not stay, I take it to a new stand and place one of the young queens with her bees on the stand which has just been vacated. The field workers will go into the hive with her, and live happy ever after.

Dayton, O.

AN EARLY TYPE OF STEAM-HEATED UNCAPPING-KNIFE

BY ARTHUR C. MILLER

The accompanying photograph is of a steam-heated uncapping-knife which the writer had made and experimented with in the summer of 1896. A rubber tube led from the steam-generator to the nipple nearest the handle, and the steam was allowed to blow freely from the other nipple. Later the second orifice was reduced with a



Arthur C. Miller's steam-heated uncapping-knife which he had made in 1896.

grooved plug. So far as the writer knows, it was the first steam-heated uncapping-knife in existence. It was far from being the perfect device now on the market, but it served to demonstrate the principle, also to inflict sundry burns, and was soon laid aside for a good old-fashioned Bingham knife. It was experimented with on two or three subsequent occasions, but was finally put among the "curios" of the "has been" collection which all good bee veterans possess.

Many persons saw this knife in operation when I first made it, and I exhibited it at Toronto several years ago, and I think at Amsterdam, N. Y., the year before. The man who made it for me is in business just across the street from this office. I recall

the date, because it was the same year I sold some real estate.

I do not use any knife now—too slow.
Providence, R. I.

[Mr. A. C. Miller was probably the first one to use steam for heating an uncapping-knife; at least we do not find any record of any earlier user. Some ten years afterward the steam uncapping-knife was used in Europe, as is seen in one of the European bee journals (*Apicoltore* for June, 1907, page 110, but the principle of heating a knife by steam for meat-chipping purposes was patented by O. Gardner, July 8, 1873). It was not till two years ago that a steam knife for uncapping was placed on the market in this country.

It is but fair to say that some like it and some do not. Steam will keep it hot continuously; but the rubber tubing, which is more or less in the way, and the extra weight of the knife, are objections with some. We have been testing the steam knife alongside of an ordinary Bingham knife dipped in a pan of hot water. Some of our boys prefer the steam knife, and others prefer to be unfettered by any attachment. We have about concluded that the man who starts with a steam knife would not use any other; and one who starts with one of the common kind, heated in a pan of hot water, may or may not want to change over to the steam knife. There are many (and they have worked the old way) who believe that the steam-heated uncapping-knife is miles ahead of any other form of uncapping-device.—Ed.]

NUMBERING POSITIONS INSTEAD OF HIVES

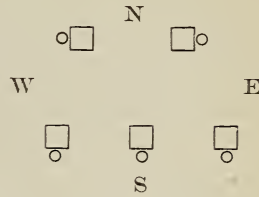
Record-Book Method of Numbering Hives

BY S. E. MILLER

On page 328, June 1, Dr. Miller is still hammering away on the hive-number question. I am surprised that he will continue fussing with numbers attached to the hives when there is a better and simpler way, and no hive numbers are needed except in the record-book. That one-inch nail driven one-third of its length into the hive, and two-thirds out—why, doctor, if there is a nail sticking out of a hive that I am working about I do not feel well until I get the hammer and pull it out. Then why bother with a tag of any kind that has to be changed every time there is a change of some kind, caused by swarming, etc.?

If Dr. Miller can pick a flaw in my system of numbering hives, let him fire away. Some years ago my method of arranging colonies in the apiary was illustrated in the

A B C of Bee Culture. They are arranged in groups of five colonies, and I may here state that I have made a slight change since—that is, I have no colonies facing north—thus:



The group in the southeast corner of the apiary is A (letter A), and the southeast hive is A1. The next west is A2; still west, A3. North of this is A4, and the one at the northeast is A5. B is the next group west of A, and the numbers 1 to 5 are repeated in each group, the groups being arranged like this:

etc.	K	J
I	H	G
F	E	D
C	B	A

Now, the hives are not numbered; but the spot where each hive stands has an imaginary number. These numbers are recorded in the book in alphabetical order, and are indexed for each group by cutting away a part of the page of each fifth set of leaves, similar to the way a dictionary is indexed.

B2 casts a swarm, and I see it issuing. I open the record at B, which is B1. I turn one leaf and have the record of B2 before me. At a glance I can see whether the queen is clipped. I see that she is, and proceed to the hive with a cage; find her, and place her in it. While the swarm is in the air I remove the colony and place a hive prepared as I see fit in its place, and lay the cage containing the queen at the entrance. I have simply set B2 a little out of the way for the present.

I now look over the yard and see a vacancy at G5. Note here that G5 has its proper place of record in the book, and it is also fixed in my mind so that if I should consult the book without being in sight of the apiary I see that G5 is marked vacant.

G5 is some little distance from B2, so that the new colony or swarm is not likely to locate the parent colony; and some of the field bees leaving G5 will likely return from the field to B2, thus further strengthening the new colony. Now for the record:

B2 is practically a new colony, but it is still B2, and will read like this: "June 10, cast swarm; have clipped queen; hived

her on 10 frames with 3-in. starters;" or, to make it as I do in practice, it would read: "6-10 cast swm.; have cl'p — hived on 10 frames with 3-in. starters." (A dash is my abbreviation for queen). I will now write the record for G5: "6-10, parent colony from B2; have 2 or more sealed queen-cells, and several unsealed;" or to abbreviate again, it would read: "6-10, par. col. B2; have 2 sc and several uns'l."

Queen-cell is written c, and I may state that I have quite an extensive code of similar abbreviations.

In looking over the record some four or five days later I see when I come to G5 that I must, within a day or two, remove the surplus of queen-cells unless I want to take chances on having after swarming, which I certainly wish to avoid.

It will be readily seen that this method may be easily adapted to any arrangement of hives. If placed in straight rows the numbers can run 1, 2, 3, up to any number.

By preserving the records it is possible to trace back any colony to its original stock or parentage, provided there has been no break in the record by superseding unknown to the beekeeper. This would not make any material difference unless superseded by a queen of inferior stock entering the hive, and killing the reigning queen, which, I dare say, does not occur frequently.

Now, Dr. Miller, do not let those tags worry you any longer. If my memory serves me well it was your writing which caused me to discard slates and adopt the book record. Why, then, do you not make use of the book to its fullest advantage and greatest availability? I can locate any colony in the apiary from any direction. It is not necessary to walk around to the side or end of the hive that the number is on. There is no number on it.

Rhineland, Mo., June 10.

[If there were a hundred or more colonies in an apiary this scheme would hardly be practicable. Anyhow why not use your scheme and number tags both?—ED.]

BEEKEEPING IN JAMAICA

Drouth Causing very Poor Crops

BY F. A. HOOPER.

This country, once famous for the production of fine honey, and in large quantities, is now producing less and less each year. Up to the year previous to that of the earthquake, which occurred in 1907 (when the city of Kingston was totally de-

stroyed and hundreds of the inhabitants of the island perished), a failure of the honey crop was unknown.

This year, 1912, is the worst that beekeepers have experienced since beekeeping was introduced in the island on a commercial scale by Hooper Bros. in 1892.

Taking an average of the whole island, each colony has produced only 14 lbs. of extracted honey this season. Beekeepers are now anxious to know if the poor seasons will continue as the years roll on. In my opinion we have arrived at the climax, and beekeepers will see a change for the better, commencing next year. Our weather prophet predicted five years of drouth would follow the earthquake, and so far he is right, especially this year.

During our best months for honey, which are February, March, and April, the weather was so dry that there was not sufficient moisture in the earth and atmosphere; hence the few flowers that did open had no nectar. If we had had our usual rainfall last year, the early drouth this year would not have affected the honey crop, for there would have been sufficient moisture in the earth; but as it was, even the deep-rooted trees failed to bloom.

Beekeepers need not fear about not ever again securing large yields of honey. The flowering plants and trees are all alive, and are just waiting for the regular rainfall to bloom again as they have done before.

The rivers which are now mere streams will be rivers again; and the streams which are now nearly all dry will again trickle down the mountain sides. It is only a matter of a little patience.

Four Paths, Clarendon, Jamaica.

THE AVERAGE CROP IN CALIFORNIA

Are Mr. Chadwick's Figures Too High?

BY J. W. KALFUS

On page 297, May 15, P. C. Chadwick gives some figures in regard to the honey yield of California. I am afraid if his figures could be proven it would cause such a rush to our State that there would not be standing room for beekeepers. While I have heard that 1884 was an exceptionally good year, we must not overlook the fact that that was a long time ago, and there were probably not one-fourth as many bees in the country as at present. However, I am of the opinion there are not many beekeepers in other States, at least, who will believe that 700-lb. story. In 1905 I was living at San Luis Obispo, and, of course, can not say as to what the yield was in

Southern California; but I know of a number of men whose crop fell short of 300 lbs. average. I heard of several men who got 300 lbs., and one who got 350; but I afterward heard he extracted his honey so green the cans "blew up" and he had to put it back in the tank and ripen it. I have no doubt that a few apiaries made more than the 350 mark, but they are few and far between. My average for 1905 was 52 lbs. per colony. In regard to his estimate of 100 lbs. average, I think he has put that entirely too high. In making these estimates for publication I think we should be very careful, and not put them too high and thereby mislead any beekeepers who may want to settle among us. Now, I don't want any one to think I am trying to keep other men out, for I am not; but I believe in giving the facts just as they exist; and if we have no way of knowing the facts we had better put the figures a little below the average than above; and then if any eastern beekeepers should settle among us, and not do quite as well as they expect, they would always be blaming us for misrepresenting things.

During the last five years I had an apiary in Los Angeles County in what is considered one of the best sage locations in the State, and my average for the five years was 71 lbs. per colony. But methinks I hear Brother Chadwick say, "The trouble was with you. You don't know how to keep bees." While I admit this is true to a great extent, still when I look around me and see such men as L. E. Mercer, M. H. Mendleson, and J. F. McIntyre, who have not done any better in that time, I am led to think the fault is not altogether my own. I mention these men because they are among the foremost beekeepers of the country, and are well known to the readers of GLEANINGS. About a year ago Mr. L. L. Andrews, of Corona, who has several hundred colonies, wrote me his average yield for five years was 60 lbs.; and Mr. Geo. L. Emerson, who operates several hundred colonies at Fullerton, wrote me his average for the same length of time was 58 lbs. I also had letters from several other men in the Southern part of the State whose names I can not recall; but not one of them claimed an average of 100 lbs. There is no doubt but there are some men who have had an average of 100 lbs. for the past five years; but there are so many whose average has fallen below 50 that it cuts their average down considerably. For my part I think an average of 60 lbs. for Southern California during the last five years is nearer correct than 100.

Bishop, Cal.

[Mr. Chadwick replies:]

The chief apprehension in the above criticism seems to be that it might cause an influx of Eastern beekeepers who would be disappointed in not getting so high an average after casting their lot with us. Referring back to the issue above mentioned, note this sentence, "taking into consideration that some years, outside of the orange and alfalfa districts, there is practically a total failure."

This estimate was based on information gathered from many beekeepers from various points, together with the experience and observation of the writer—not for a period of five years, but since 1884. Quite true, conditions have changed since the latter date, and no such phenomenal yield may be expected again, because of a lack of flora then bountiful, and because there are many more bees now.

Mr. Kalfus quotes Mr. Geo. L. Emerson in producing his proof, Mr. Emerson being the man who informed me of the 700-lb. yield for Orange Co. in 1884, and I have no reason to question so eminent an authority.

My average for the past five years has been under 100 lbs.; but for the past seven years, including 1905, it exceeds 100 lbs., though in 1905 my average was only 250 lbs., while others, to my knowledge, more favorably located for a late flow, secured nearly 400.

The occasional (not frequent) heavy seasons are what runs up the average, and should not be taken by any means as a season's average.

These heavy seasons are what keeps up the hopes of the California beekeeper who waits for the realization through seasons of dearth and heavy loss and is finally rewarded when his forces are depleted, and in the poorest possible condition to realize the most from them. I still believe my estimation is not far from correct; but it must not be forgotten that this includes some very thin and a few very fat seasons.

P. C. CHADWICK.

AN ANALYSIS OF BEE-BREAD

BY RUTH L. PHILLIPS

The following analysis of bee-bread was made by me during the summer of 1911 in order to ascertain the nature of this substance and its relation to the growth changes in the nerve cells of the ordinary Italian bee.

As one would expect, there is a large proportion of water, 12.75 per cent, in bee-bread. The bulk of the substance is pro-

teid, the nitrogenous portion of the food. Of this there is a percentage of 64.4 per cent. This high proteid content is not strange when we consider that pollen is mainly protoplasm, a substance largely made up of proteid. There are 9.23 per cent of fat. This fat is remarkable in that some of the oils composing it are very volatile, and have a penetrating disagreeable odor. There is a sugar content of 9.5 per cent. This is 1.3 per cent cane sugar and 8.2 per cent sucrose. A large part of this sugar comes from the honey used in mixing the bee-bread. An analysis of pollen alone would be necessary to ascertain the exact amount. I was surprised to find considerable wax, 3 to 5 per cent, in the bread. Dr. E. F. Phillips believes this to have come from careless removal of the pollen from the cells in which it is stored. However, as I was particular to avoid that very thing I believe that most of the wax was a part of the bread. Dr. Phillips maintains that pollen will keep without preservatives being used. I endeavored to preserve dandelion pollen in the laboratory, but failed because of mold, and it would seem that the controlled conditions in the laboratory would be better adapted for keeping pollen than those obtaining in the hive. I therefore believe the wax is used as a preservative.

The following is a tabulated *resume* of the analysis:

Water, 12.75 per cent; proteid, 64.4 per cent; fat, 9.23 per cent; sugar, 9.5 per cent (cane sugar, 1.3 per cent; sucrose, 8.2 per cent); wax, 3 to 5.00 per cent.

Syracuse, N. Y.

WHY THE BEES DID NOT EAT THE FRUIT

BY BENJAMIN W. DOUGLASS

[Mr. Douglass was formerly State Entomologist for Indiana. Politics threw him out of office. He is now largely engaged in fruit-growing, and is editor of *The American Horticulturist*, published at Indianapolis. He ought to know what he is talking about, and does.—ED.]

Bill was always a hard person to get along with, and all of his neighbors avoided contact with him just as much as possible; so I was not unprepared when he came to me with his tale of woe. I keep bees, and Bill has a few peach trees and some grapevines. I also have a few peach trees—in fact, several thousand more than Bill; but that does not keep Bill from thinking that he is the original and only fruit grower. Bill was angry. His peaches were being eaten up by my bees, and his grapes were being ruined. Something had to be

done about it. His entire crop was threatened with destruction, and he demanded justice. I realized that I faced a diplomatic problem, and so I proceeded with caution.

"Bill," said I, "how many times did you spray your peaches this spring?"

"Nary a time. My peaches don't need sprayin'. They was always all right until you brought your pesky bees out here."

"Well," I pursued, "was not this past season a particularly severe one on peaches, inasmuch as the warm wet weather has caused them to rot more than usual?" He admitted that it was. "Now, Bill," I said, "did you ever actually see a bee eating a hole in a perfectly good peach?"

Bill is fairly truthful, particularly when he suspects that you have the drop on him, and he hesitatingly admitted that he had never seen a bee at work on a perfectly sound peach, but that their first work was, without exception, at a rotten spot where the skin was soft or even broken. With this admission I took the liberty of crowding Bill into a corner where he could not get away, and proceeded to give him a lecture on the way bees "damage" fruit.

It is practically impossible for a honey-bee to "eat" through the skin of any of our common fruits; and if they do any damage it is purely secondary in nature. If the fruit grower would turn his attention to the proper methods of caring for his crop he would find that the bees will not bother him; and in place of fighting the beekeeper he would welcome him to his locality.

The experiment has been often tried, of keeping hungry bees in a cage with some perfect fruit. They will not touch it. This is not because of any angelic disposition on the part of the bees, nor because they are possessed of more than human sense of property rights, but simply because the Creator did not intend that bees should eat hard things; and the skin of fruits is hard. The bee's mouth is a soft structure, built for sucking the nectar of flowers. It would be quite impossible for such a mouth to "bite." Imagine boring a hole in an apple with a soft-rubber tube. That is what a bee would have to do if it did not depend on other insects to break the skin on it first. Some fruit growers argue that bees "sting" the fruit and then suck the juice. While such a performance is anatomically possible, there is no record that bees ever use their sting for this purpose.

Of course, Bill offered objections from time to time, and in the end I do not think that he was altogether convinced that the peaches had not been "eaten" by my bees. Just to keep peace in the family I gave him a couple of sections of new honey, and he

went home feeling satisfied that he had done his duty by his orchard. At the same time I knew that a spray-pump was lying out back of his barn, rusty with neglect. His peaches didn't need it. He had tried it, and he knew.

SPRAYING IN BLOOM KILLS BEES

Half the Bees in Pecos Valley, N. M., Killed this Spring

BY R. B. SLEASH

The editorial, June 15, on spraying fruit trees while in bloom, makes my blood boil. Of course, these men claim that, under certain atmospheric conditions, the spraying did no harm to the bees. Now, there are only three conditions under which it would not hurt bees: 1. Plenty of other flowers that bees would rather work on; 2. Weather so cold that the bees were not working; 3. Weather too wet for bees to be out. Now I have had bees right beside 600 acres of orchard for the past 15 years, and the last 9 years the orchardists have been spraying, and during this time I have had a little experience. In 1904 they tried spraying in bloom. I lost about half of my bees and brood, but only about 25 colonies perished outright. Bees did not get in shape to do any thing till Aug. 1. After this I did not have any serious loss (as the orchardists did not spray quite so early) till 1909, when I lost about 25 or 30 per cent of my bees and brood, and some 30 good queens; but by requeening promptly I lost only a few colonies, and the bees got in shape to make honey by July 10.

In 1910 and 1911 I had some loss, but not very serious. In 1912 I went over all my bees the first of fruit bloom, and found I had 163 hives in fair condition, with from two to six frames of brood. Now (July 2) I have 121 hives with some bees in. At least a third have a patch of brood from two inches in diameter to as large as the hand. The rest have from half a frame to six frames of brood.

I have never had foul brood in my yard, and find dead brood only when fruit trees are sprayed in bloom. I then find plenty of dead bees all over the yard. I had some chilled brood one spring when we had a cold wave and snowstorm April 20 and 21, 1907.

So far as I can learn, at least half of the bees in Pecos Valley were killed by spraying this spring. If spraying in bloom does not kill bees in New South Wales it is very different from the Pecos Valley of New Mexico.

Roswell, N. M., July 2.

HIVES NUMBERED BY POSITION OCCUPIED

BY LOUIS MACEY

I see Mr. Scholl, May 15, is voicing the need of a satisfactory hive number "that is cheap and readily transferrable from one hive to another."

When I got above 20 hives the "identity" question began to bother me, and I went to work and painted numbers on the hive fronts in consecutive order as they then stood; but as time went on, and I found myself putting colony No. 1 into hive No. 32, so as to clean the propolis and burr combs out of their old home, and setting hive 6 away off in another place, and the swarm in a hive numbered 41 on the old stand, etc., I found I was getting a good many different kinds of mixups, besides giving my apiary a very much jumbled-up appearance.

Some of our beemen tell us they are doing such a rushing "big business" that they can't afford to bother with any such thing as a record-book; but I think most of us find time to keep track of our queens and the different colonies and their changes; and in any case the main thing we want to identify is not the hive but the hive *location*, or what some call the hive stand.

I have evolved a plan for this that is simple, inexpensive, convenient, and as nearly everlasting as the apiary itself; moreover, this number automatically puts itself on. My hives are in pairs in parallel rows, "breaking joints" like this:

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□ □      □ □      □ □      □ □      □ □
      □ □      □ □      □ □      □ □
□ □      □ □      □ □      □ □      □ □

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Each hive has two numbers—an individual hive number and a *row* number. That the hive number comes first is all I have to remember. The north row is 1, and the first hive is 1-1, or "first hive, first row;" and the 14th hive in the first row automatically numbers itself 14-1, as the next to the last hive likewise proclaims itself 13-3.

I occasionally paint the number on some of the alighting-boards to save counting; but unless the rows are very long, that is unnecessary. I now have six rows, and find it easy to increase either the length or the number of the rows without throwing the numbers "out o' kilter."

The even-numbered hive is always the east hive of the pair, and the odd numbers are always the west hives in each pair.

There are also several other advantages; and the longer I use this plan the better I like it; I don't expect it to suit all conditions, but give it for all it is worth.

North Platte, Neb.

Heads of Grain from Different Fields

Hive Numbers Printed on White Enameled Metal Tags

On page 296 Mr. Scholl asks for a hive number which is satisfactory besides being cheap and durable. I have for some time been using a number of my own make which calls for a very little outlay of either time or money, and which has given entire satisfaction. I got a piece of heavy galvanized tin, and with a pair of tin shears I cut it into rectangular pieces about $2\frac{1}{2} \times 3\frac{1}{2}$ in. (though for numbers of more than two figures the tags would have to be longer). I rounded off the sharp corners; then with a large nail (about 16 penny) I punched a hole in the middle of one of the long sides about $\frac{1}{4}$ inch from the edge. I then dipped them in white enamel paint and laid them on a board to dry, with the rough edge of the holes up. The numbers should go on that side, as the tags will then lie flat against the front of the hive. When the enamel is dry, but before it gets hard, paint the numbers in black with a small marking-brush. A little practice on a board or a paper before beginning on the tags will result in better figures.

To hang on the hive, select small wire nails, the heads of which will just pass smoothly through the holes in the tags. Drive the nails into the hive fronts so that about $\frac{1}{4}$ inch projects. The rough edge of the hole in the tag prevents the latter from jarring or blowing off, yet the tags can be slipped off or on by the apiarist in a moment.

Louisville, Ky., May 28.

J. B. CHRISLER.

Hiving a Swarm Quickly

Seeing an account of hiving a swarm by an expert, in the May 1st number of GLEANINGS leads me to write an account of the quickest work in hiving I have ever done. On May 4, this year, I was called on the telephone and informed that a large swarm had settled in the rear of a friend's residence about three city blocks from my home, and that the bees, being strays, were mine if I would hive them. I had an engagement in less than an hour, so my first idea was to decline the offered bees because the time was so short; but the bee fever was too strong to be overcome, though I have had it for more than forty years, so I rushed home from my office, quickly secured a frame of unsealed brood, laid it flat on the bottom of a very light box having a hinged lid on it, walked rapidly to the scene of action, where I found the swarm clustered on a small branch of a chinaberry tree, in easy reach. Without veil or smoker I quickly cut off the limb without jarring off a single bee; laid the cluster in the box still on the limb, closed the lid, and away I went with my prize. Arriving home I secured a single story, filled with empty combs; placed the limb over the frames, after having inserted the frame of unsealed brood; gave them a slight shake, and after some of the bees had begun entering thus from the top, and when they got well to going, I shook the remainder off the chinaberry limbs, and they were in the hive almost instantly. There remained nothing but to put on the top and rush to the meeting, where I arrived with five minutes to spare.

It is well worth while to emphasize the use of a light box, made of tough wood, and hardly as thick as pasteboard to catch and carry to the proper place a swarm, and also the great advantage of a frame of unsealed brood laid flat on the bottom. I just happened to have this box, and it had never occurred to me to use it this way until this occasion arose.

Carrollton, Ga., May 14.

L. K. SMITH.

A Quick Way of Killing a Surplus of Drones

I have read in the bee journals a description of a queen-sieve and its uses, but never saw a drone-sieve described, although the occasion for its use may arise in every apiary sometimes. Here is one that I have been using with good results. I nail a queen-excluder to the bottom of an empty hive body, and set it on top of another empty hive body close to the hive to be operated on, and shake into this sieve bees and drones from every comb except the queen, and cover it as quickly as possible. After replacing the combs I put a Porter bee-escape on

top, and on this the sieve with the drones, after having brushed off the bees that have clustered on the under side of the sieve. Next morning you find all the bees that remained with the drones have passed down the escape, and the drones on their backs kicking the bucket. To shorten the agony of death I put the sieve over a teaspoonful of burning sulphur, and in a minute it's all over.

Monterey, Cal., May 14.

WM. A. SEDDING.

Queens Caged in a Hive

1. Is it safe to keep ten or fifteen untested queens in an upper story (caged) separated from the old queen by an excluder for, say, a week or ten days, until convenient to make nuclei? 2. Is there any preventive or cure for white diarrhea in young chickens?

Slate River, Ont., May 15.

J. M. MUNRO.

[The longer you keep queens caged, the worse it is for them. Sometimes they will die in less than a week, and again they will live a month or so. It depends a good deal upon the bees of the hive, and also upon the vitality of queens themselves.]

The poultry journals for a year or two past have been full of remedies for the white diarrhea, but I believe the general decision has been that prevention is better than cure. I have never had any experience with it, and my impression is that if the chickens are put often enough on new ground, not too many in one lot, and kept out in the open air and in the sunshine as much as possible, there will be no such trouble. Filthy quarters and rearing large numbers of chickens on the same ground are pretty sure to start diseases of this sort.—A. I. R.]

Dual Introduction

Please give the plan of dual queen introduction as invented by Mr. Alexander, and printed a few years ago in GLEANINGS.

JOSEPH BRAUN.

New York, June 30.

[Briefly, the dual plan of introduction is as follows: You introduce a virgin queen by the usual cage plan, and at the same time cage another virgin in the hive with a piece of tin over the candy. When the first virgin has been released, and is laying, remove her, and at the same time remove the tin from the candy of the other cage. Then cage a third virgin in the hive with tin over the candy, etc.]

If you have reference to the plural queen plan, as mentioned by Mr. Alexander in his book, we may say that this is quite a complicated method; and, although it has been tried out by a good many beekeepers for several years, there is practically no one in the country who is following it at the present time, the reason being that in almost every case the surplus queens will be killed after the honey-flow.—Ed.]

A Stubborn Colony that Will Not Accept an Introduced Queen

I have a colony of bees that are kind and gentle. They never seem inclined to sting, but they simply won't have an Italian queen with them. Last year I purchased three tested Italian queens and introduced them according to directions on the cage, and a few days after they released them we would find them carried out dead in the drone-trap.

Last fall I purchased one of your A B C books and went according to directions. This spring I got a tested Italian queen. About two months ago they let her stay with them about four weeks, then I found her carried out dead. As I am anxious to get a colony of Italians, two weeks ago to-day I received another queen, and all seemed well until to-day, when they carried her out; but I happened to be there, and rescued her all but dead. Now I write to you for advice. There is no queen in the hive, as I looked them over several times. Before they killed the first one this spring they started nine queen-cells. Some of them were sealed over when she died. They are a good quality of hybrids.

Marietta, Ohio, July 2.

GEORGE AMANN.

[Once in a great while we run across a colony like the one you describe, that seems determined to kill every introduced queen within a short time after she gets to laying. We recall we once had such a col-

ony; and as often as we would introduce a queen they would kill her as soon as she had laid a few eggs. We finally let them rear a queen of their own from the eggs left by the last queen; and this one they allowed to stay in the hive; but why, we can not understand. We do not know of any thing better you can do than to let this colony raise a queen of its own. If they kill her, we would brimstone them. Hybrid colonies are more apt to cut up capers of this kind than pure bees of either race. —Ed.]

Uniting by the Newspaper Plan

I have ten colonies of bees—six strong, one fair, and three small ones, about a gallon or a gallon and a half, and I want to join the fair one and one of the small ones and make a strong one out of it, and the other two together will make a fair or strong one. The one that I am going to join is in an eight-frame hive I made myself. It has a movable bottom. The fair one is in an eight-frame bought hive, and the other two are in a box. The one that I am going to join first is in the hive that I made. I am going to make a hole in the bottom about two inches across, and put it on top of the small one in the box, and put a hole in the lid of the box about the same size, with a screen on top of the box, and set the other hive on top of it, and leave it on two or three days or a week—long enough so that the bees on top will have the same smell as the one in the box, and then take the screen off and put a perforated zinc so that the bees will go from the box to the hive on top, then the queen can't go up; then if they don't go up I can shut up the bottom doorway in the box, and they will have to go up to fly after they get joined. Then I want to transfer them to a ten-frame double-wall hive. When will it be best to join and transfer them?

The other two, I want to put one in the box with the one in the eight-frame bought hive. What is the best way to join them? The ones that I want to transfer into the double-walled hive, will it be best to put them in the frame full of foundation or the frame with the bees and combs on?

Leigh, Neb., June 26.

WM. F. GLANDT.

[We are not sure but that it would be better for you to follow the newspaper rather than the wire-cloth plan which you refer to. The newspaper plan is really simpler. Remove the cover of the lower hive, place a single thickness of newspaper on top, and set the second hive on top minus the bottom-board. By the time the bees gnaw through the paper the uniting will be so carefully and slowly done that there will be practically no fighting, and the moved bees, says Dr. Miller, will stay where they are put. A little later you can easily transfer the bees to a 10-frame hive by picking out 10 of the best combs that contain brood and some honey, and merely lifting them into the ten-frame hive. Then shake the bees from the rest of the combs from the empty hive before the entrance of the ten-frame hive which should now stand on the old stand.]

Regarding the other colony that you want to transfer to the double-walled hive, if the combs are straight and practically all worker size of cells, it would not be necessary for you to shake the bees on new frames of foundation; although if there were any trace of disease or suspicious brood in the old combs it would undoubtedly pay you to shake the bees on to the new foundation. —Ed.]

Supersedure of Queens; How to Recognize Supersedure Cells from Swarming Cells

I have a colony that is an exceedingly powerful one, built up from a swarm in the latter part of May. They began working in splendid style, drawing out foundation, and then for some unaccountable reason they began building queen-cells, which I as persistently continued to cut out. As I know now, it was a case of supersedure. I found the queen, only a year old, clipped, ten or twelve feet in front of the hive one day, surrounded by only a half-dozen bees, and as she seemed to be in good condition I went through the hive very carefully, cut out every appearance of a cell and restored her. There was absolutely no pretense of swarming, as one or two people were in the vicinity of the hive all day. About three weeks later I found the clipped queen lying in front of the hive dead; and in going through the colony I found no eggs, no queen-cells, and no queen. Naturally I then concluded the

queen had died, and that there was nothing left in the hive from which to raise a young queen. Imagine my surprise the other day, after putting the bees through a "strainer," to find a magnificent young queen just beginning to lay. Where they raised her, and how they did it, I can not conceive, as I made it a custom to go over every comb in the hive once a week, and I did this very thoroughly and got out every cell I could find.

The new queen I introduced by caging her on the face of the comb, and every thing is lovely. The bees are working splendidly. In the meantime, I could not make up my mind to destroy the young queen, so gave her a couple of sections of honey and young bees, and started her to housekeeping in another hive.

This matter of superseding is one of great interest to beekeepers, and incidentally must be one of the most puzzling problems by which the beekeeper is confronted—not as to why the bees supersede the queen, but rather how the beekeeper is to determine whether the bees are building cells with the intention of swarming or with the intention of superseding the old queen.

Detroit, Mich., July 10.

J. M. FRANCIS.

[Supersedure may take place almost any time of the year, or at any time when the queen shows disposition to fail. This failure may be due to old age, to injury received while in the mail, or to rough treatment she receives at the time she is introduced.]

It is not possible to detect the difference in appearance between supersedure cells and swarming cells; but when we find cells built during the swarming season we naturally conclude that they are swarming cells—that is, providing there is a good queen in the hive already. But when we find a laying queen apparently failing, and nicely built cells in the hive at any other time of year, we usually call such cells supersedure cells.

The size of worker bees will vary a good deal according to conditions. During the midst of a heavy honey-dew, and especially at night, after the bees are quiet in the hive, they will appear to be very large, because they are well filled with honey, and putting it through the process of digestion—or, more exactly, inversion.

The young queen you found after putting the bees through a "strainer" (perforated zinc) was probably from some cell which you missed. —Ed.]

Moths in Comb Honey after it Leaves the Hives

Dr. Miller says, page 36, Jan. 15, "You said moths are liable to lay eggs in S. D. House's combs, or his nice comb honey, after either has been taken from the hives. I supposed his nice comb honey was in sections, so I ventured the guess he never had an egg laid in them after they were taken off, since the moths don't lay eggs in comb honey here after it is taken from the hive. J. E. Crane practically says they do with him. The question now is whether my moths or Bro. Crane's are the exceptional ones."

I can not answer as to whose moths are the exceptional ones; but if Mr. Crane's are exceptional, so are mine; for nearly all my trouble consists in trying to keep the moths out after the honey is off the hive. In the yard they never bother unless I am so careless as to leave a colony for some time in a weakened condition. But in the house, especially after about the middle of July, it's a fright all the time. Of course it is the larger moth that gives me the trouble in the comb honey, the smaller variety working on old combs alone. But these large moths will get in and lay their eggs all around the wood of the sections, and many times right on the face of the combs.

My only salvation is to use sulphur at least once a week, and even then they sometimes get the better of me in some corner that I have overlooked.

HONEY AS A MEDICINE.

Yes, honey is being used for medicine, and people are not so slow after all in learning to use it and to appreciate it for that purpose. A large number of my customers use it for medicine alone. I attribute it to the fact that, when selling honey through the neighborhood, I have always mentioned in particular that honey is one of the best cough and sore throat remedies known. I often mention, too, that honey is cheaper than butter if used in place of that commodity, and that the food value of it is greater than that of almost any other food. By means of

this and other advertising I number probably two-thirds of the people in this community among my honey customers, although there are several other beekeepers in this vicinity, and some of them sell their extracted honey two cents a pound cheaper than I do.

Barryton, Mich.

LEON C. WHEELER.

The Proportion of Sugar to Water in Nectar

I should like to know how much evaporation is to nectar gathered from clover. We have a hive on the scales that is running in an average of ten pounds a day; but it lightens up a pound and a half each night. Would that be equal to eight pounds and a half a day, or not?

Brook Park, Minn., June 29.

BELL BROS.

[It is not possible to give a definite answer to this question, for the simple reason that so much depends upon general conditions. Some nectars are very much thinner than others, and of course there would have to be more evaporation or ripening in order to reduce it down to a honey that will run between eleven and twelve pounds to the gallon. Ordinary nectar, we should say, would run anywhere from two to ten parts of water to one part of solid saccharine matter. The evaporation that you discover in your hive, where they gather ten pounds per day and lose a pound and a half at night, we should say was very nearly normal. Of course, not all evaporation takes place in twenty-four hours.]

It is possible and probable that some of the excess of water is discharged by the bees while on the wing before reaching the hive. You will find some interesting facts bearing upon this subject by referring to GLEANINGS for Sept. 1, page 514, and Sept. 15, page 549, 1911. Refer to what is said on the subject of feeding outdoors sweetened water of a sugar of about nine parts water to one of sugar.—Ed.]

To Get a Swarm Out of a Box

A drone-trap I bought last year let the queen through every time, and the two last swarms I saved I put the perforated zinc over it. Can you tell me which is the best way to get a swarm out of an old box now? I intend to put the combs in the new hive. I should like to get new queens; but it will be a hard thing to put them in the new hive that I hived this summer, for they build the combs crosswise. I had no foundation.

Ft. Wayne, Ind., June 30.

JNO. W. HOEVEL.

[As the queen and drone traps all have standard width of perforation, your letter shows either that the queen in question was abnormally small or else that the trap had been bent or injured in some way, allowing an opening for the queen to get through.]

If we were in your place we would treat the hive in which the combs are built crosswise just as though it were a box hive, and drum the bees out according to the plan described in the enclosed circular on transferring bees.—Ed.]

When the Giving of Foundation Causes Swarming

I have six colonies of bees; and, although the past winter on Long Island was the coldest we have had for thirty years, my bees came through the winter in better condition than ever before. I did something I never did before—namely, left the entrance wide open and put one super on the top of each hive. The result has been at this date, May 23, that I have had more swarming than ever before. A swarm has issued from each hive, and in some cases two already.

What is the best way for me to prevent swarming? I use the ordinary eight-frame dovetailed hive, and do not think much of it. It seems to me that a Jumbo hive would prevent swarming. I understand that the Dadants do not have swarming, but do not know what they use.

E. GRISWOLD.

Great Neck Station, N. Y., May 23.

[Mr. A. B. Marchant, of Sumatra, Fla., one of the largest honey-producers in the United States, believes that the giving of supers of foundation will start swarming when the giving of supers of *drawn comb* will check it. Beginners will often give section supers to a colony before it is strong enough to enter. This may or may not have a tendency to check swarming; but nothing is accomplished by giving supers too soon. On the other hand, when a weak colony has filled its brood-nest clear full of

honey, the giving of a super of sections will not help much. If the colony is too weak to go into a section super, a better way is to take away the combs that are full, providing they contain no brood, and substitute empty combs. Or this may be done: Give a *s. allow* extracting super of *drawn* combs; but don't expect a weak colony to draw out foundation in sections or shallow frames unless there is a very strong honey flow on, for they will probably sulk just as soon as they get the brood nest full, and then swarm. Before bees will enter a super containing foundation the colony must be strong enough so that the super will be filled with bees. And even a strong colony will refuse to go up unless there is plenty of bottom ventilation, and it may even be necessary to set the hive up on four blocks.]

The question whether the hive is eight or ten frame or a jumbo, in your particular case, had nothing to do with swarming, except that the jumbo or ten-frame would have a little more storage capacity, and according as it is larger it would delay swarming.—Ed.]

Springs to Hold the Brood-frames Close Together

As I have had a great deal of trouble in reaching the brood-chamber, owing to the fact that the frames have a tendency to spread out and fill up the hive until there is no room to break the first frame loose when cutting it out, I have adopted the following plan: I take two sections, cut them down to the length and width of the spacing part of the frames, and tack them on the hive body so that the frames will come against them, making a full beespace between the top-bar and the body. On the other side I use super springs to press the frames together. I cut the spring long enough to make the pressure half way on the spacing part of the frame. I also equip my shallow supers in the same way.

Ashville, Ala.

W. D. PRICKETT.

[It is seldom or never necessary to use springs to hold brood-frames together; and although springs are very useful in a comb-honey super, we think the more you use the arrangement you describe, the less you will like it. Mr. Danzenbaker provided springs in the brood-chamber of his hive; but in actual practice we do not use springs in the brood-chamber, for we consider them not only unnecessary but too much extra machinery to handle every time the hive is opened.—Ed.]

Stock Eat Sweet Clover Down to the Stubble

I noticed on p. 324, May 15, that the stock referred to do not eat sweet clover readily. In this vicinity all kinds of stock eat it down to the ground, and the only trouble is that there is not more of it to be eaten. This, however, is a dry locality, and there is not much natural pasture. The plant does not grow on the high land here, but along creeks and in canyons.

Mohler, Wash., May 25.

To the Discouraged

Come, you discouraged ones; why should you murmur,

Mourning for bees that will gather no more?

Look not at hives that are piled by the corner;—

Smell not the odor that comes through the door.

Clean up the old hives; of dead bees make compost;

Bury them well in the rich garden soil;

You can replace them by carefully trying—

A little less mourning, a little more toil.

See! the white clover lies thick on the hillsides;

Basswoods so budded the branches will bend;

Harvests like this may be often repeated;

Do not be thinking of what might have been.

Gather the combs for a careful assorting;

Melt up the poor ones and care for the rest;

Keep your heart fixed on the main proposition—

Mayhap these losses were all for the best.

One thing is certain; the prices of honey

Now will be better than ever before;

Work, in the future, may bring you more money;

Then work with the vim and the courage of yore.

Bridgeport, Wis., June 13. HARRY LATHROP.

Our Homes

A. I. ROOT

CHARACTER BUILDING; SOME SUGGESTIONS TO EMPLOYEES OF THE A. I. ROOT CO.

Seek ye first the kingdom of God, and his righteousness, and all these things shall be added unto you.—MATT. 6:33.

My good friends, I suppose every one of you would be glad to get better pay; and I want to tell you that the A. I. Root Co. would *also* be glad to see you get better pay, and this is why I offer some suggestions. First, I want you to read the following, which I clip from the *Chicago Advance*:

A few years ago a prosperous business corporation applied to a bank president whom we knew, asking him to recommend to the house a young man "who could be trusted." The reply was, "Every Wednesday evening at the hour when the church bells are ringing a young man passes my house on his way to the prayer-meeting of his church. I like that. If I were you I would look him up." And the business man did look him up, and made him an offer of double the salary he had been receiving—and he is now getting more than he had ever dreamed of. We know the parties, and knew of the incident at the time. The prayer-meeting habit is a valuable business asset—better in some respects than a college diploma. Another incident came to our knowledge in regard to the week-night service. One of our city pastors recently went into the wholesale section of the city and asked to see one of his "boys." "Have we any of your church members here?" said the manager. "Yes, six." "Are any of them Christian Endeavorers?" "Four." "How many go to the Wednesday night prayer-meeting?" "One." The next morning that "one" was sent to a distant State upon an errand calculated to test his honesty, ability, and zeal. On his return, having successfully performed his duty, his opportunities were enlarged and his salary quadrupled. The prayer-meeting habit is a good asset; but the Sunday-baseball passion will cost any young employee dear. We know a bank president in the West who dismissed a clerk for attending the races upon a track in which the president was himself a stockholder. The business man is made or marred usually before he is twenty-five.

The above is a fair illustration of the way in which clean straight young men often get an advance in wages. I do not by any means recommend that you should go to prayer-meeting or Sunday-school, nor even to church, solely with the idea of getting *better pay*; but a consideration of the matter may prove to be at least one incentive. The habit of these young men had built up character; and this world needs clean men and boys more just now than ever before.

Now, in order to get back to what I have had in mind for some time past, will you excuse me if I mention that, when the whistle blows at quitting time, quite a number of our employees get out their pipes and tobacco just as soon as they are off our premises? There is a very good reason, that I need not mention, why it would be unwise to have smoking of any sort around the combustible material that most of you

work with. From the clipping I have given you, you will see how a small matter fixed the wage value of a man or boy. Really, do you think *any* institution would pay *more* for the boy who lights a pipe every day when he starts home for dinner? Would not almost any employer of men decide against the boy who smokes a pipe?

Our State of Ohio has passed stringent laws, as you may know, against selling or furnishing tobacco to boys; and it is now pretty well known that boys who are ambitious to excel in physical strength have cut off their tobacco, or else never used it. Our schools and colleges not only give us abundant evidence of the effect that tobacco has on the intellect, but I believe it is generally conceded that tobacco in any form is a stepping-stone to stronger stimulants.

What has particularly called my attention to this matter just now, is the statement that a boy in our employ recently took his pipe out of his mouth and went around to other boys, big and little, and urged them to "take a pull" at his pipe—the pipe he had just taken out of his tobacco-stained and dirty mouth! Now, most of you know (better than I do) how much truth there is in it, and it prompts me to appeal to your best and most manly sentiments in regard to the matter. I think, if you will look about you, you will find that as a rule our leading men who occupy high and important places are not tobacco-users. Abraham Lincoln never used tobacco. Roosevelt does not use it in any shape or manner; neither does Bryan, and it is very unlikely that either of them ever will use it.

When we recently installed convenient and pleasant closets for men in our different buildings, a kind request was posted up, not to spit tobacco juice on the floor nor in the corners of the room. Notwithstanding this, it has pained me to see the disagreeable accumulation, little by little, more or less, in every one of our men's closets.

Let me ask in closing, dear friends (for I hope you are all my friends), will you not consider the matter, and help your employers in their efforts to keep up the reputation our establishment has long enjoyed, for not only being up to date in every sense of the word, but for setting an example of cleanliness and decency?

I have given you in the above a word-picture of two boys—one on his way to

prayer-meeting, which he attends regularly, and probably *invites others* to come with him. The other boy goes along the street puffing a pipe. He is not going to prayer-meeting, however, you may be sure; but he takes his pipe out of his mouth, and also "invites others" to take a pull on it. Which of the two boys will have the better chance, and get the best pay for his services here in this world? And, finally, when he comes to die, what then?

There is no man that hath left house or parents or brethren or wife or children, for the kingdom of God's sake, who shall not receive manifold more in this present time, and in the world to come life everlasting.—LUKE 18:29, 30.

The above was printed on a leaflet, and one of these leaflets was put into the pay envelope of each one of our between 200 and 300 employes when they got their pay on Saturday noon. We hope and pray that it may bear good fruit. While we are on the subject of tobacco I wish to submit to you a clipping from the *Sunday School Times*:

WHAT IS TOBACCO?

In the terms of the physician, and told in brief, tobacco is purely and simply a poisonous drug, having no beneficent influence, and for this reason removed from the authorized list of medicaments in which it once had room. It has no food value, it is a narcotic similar to opium in many of its features, its use seldom fails to constitute a drug habit.

Now, you who use tobacco, and everybody else whose eyes rest on these pages, I submit the question: Is it not true, as stated above, that tobacco is not food and is not medicine? It is simply a poisonous drug, and probably forms the worst drug habit that has ever afflicted humanity if we except intoxicating liquors; and how many ever began the use of liquor without first using tobacco as a stepping-stone?

Here is another clipping, from the *Cleveland Plain Dealer*:

GAINS 300 SALOONS.

H. H. Schleman, in charge of the liquor-tax collections in the county treasurer's office, said yesterday that 300 more saloons are doing business in Cleveland than last year.

Licenses have been issued to 905 cigaret dealers—an increase of more than 100 over last year.

What do you think of the above? There may be differences of opinion in regard to whisky and tobacco; but I am sure there is a pretty general agreement in regard to cigarettes; yet the above clipping informs us that the city of Cleveland and the State of Ohio grant licenses to sell the deadly "coffin-nails;" and not only that, during the last year one hundred new licenses have been granted. "Lord, help!"

Now, lest you take it for granted that I am a "calamity-howler," and hunting up all the sad and mournful things, let me give you another clipping from the *Sunday School Times*. Perhaps I should explain

first, that over in "Merrie England" it used to be the fashion for the mother of the home to carry the purse; and I wonder if it would not be a good fashion to adopt here right now in our "land of the free and the home of the brave." Well, this clipping that I am giving you is English, as you will notice by the talk; and I am sure it will interest our people who love poultry as well as temperance. Read it yourself and see if I am not right about it:

THE EX-MISERABLE'S BEER MONEY.

Mr. Harold Begbie tells the following in *The Century Magazine*: I was introduced a few months ago to a painter by trade, an ex-fighting man, an ex-drunkard, an ex-miserable. Religion has restored his soul, given him new birth, and made him a useful citizen. He told me how his mates "get at him" for being a teetotaler, and how they are continually asking him, "Don't your missus ever give you any beer money?" "To which I answer them," he said, grinning, "Hoh, yuss; my old lady gives me plenty of beer money—shillings and shillings. And where do you think I keep it? In my garden. Ain't that artful of me? And some of my beer money has got feathers and lays eggs, and some has got fur and makes lovely pie, and some has got flowers and smells a bit of all right. Yuss, if you'd like to see my beer money, drop in some Saturday afternoon and take a walk round my garden. I'll show you last week's beer money, the week's before—yuss, and last year's—hopping and clucking and crowing and smelling beautiful. By the way, old friend, where's *your* beer money? Where is it? Can you show it to me, or is the publican keeping it for you till Christmas?"

Now here is just one more clipping, which I take from the *Union Signal*, that makes me happy every time I think of it. Read it:

GOVERNOR WEST'S CAMPAIGN OF LAW ENFORCEMENT TO SAVE THE SONS AND DAUGHTERS; OREGON'S CHIEF EXECUTIVE CALLS OUT MILITIA.

"Hasn't the governor authority to use the power placed in his hands to protect the God-given property of some poor helpless mother or father? I think so. Anyway, I know one governor who is going to put the question to the test mighty soon," announces Governor West.

Probably no State has ever been more surprised at the act of its chief executive than were the citizens of Oregon when Governor West announced his campaign of law enforcement, which he stated he would carry out through regular channels if his warnings were promptly heeded; otherwise by invoking martial law, with himself as commander-in-chief. He declared that his efforts would be largely directed toward the saloons and road houses, and that the shipment of liquor into dry territory must be stopped at once.* A few days after the issuance of this warning through the press, the platform, and the pulpits (the latter have been freely opened to him) he called a meeting of the saloon-keepers and brewers, to whom he planned to deliver his warning and ultimatum. Because of the absence of the manager of the biggest brewery, the liquor men sent him word that they greatly desired a postponement of the meeting, doubtless hoping that the Governor's action would also be deferred. Evidently, however,

* Once more may God be praised that we have at least one governor who realizes not only the harm but the awful inconsistency of permitting brewers and distillers to continue to ship liquors into territory made dry by the wishes of the people. Manatee Co., Fla., has never had a saloon; and the good people there, I think, will never permit one; but liquors are being shipped in by express constantly, despite any thing we can do; and these shipments go mostly to the colored people. Only a few days ago for the first time that any thing of the kind had occurred in that part of Florida, a negro was taken out of jail and lynched, when it was not quite

this meeting was considered by him only an incident in his campaign, and on the day set for its opening he fired the first gun.

Among a number of roadhouses that are to be reached on the various drives from the city (all of which have been a serious menace to the morals of the city for years, not only in encouraging drunkenness but as links in the white-slave chain) was the Milwaukee Inn. Many attempts have been made to close this place, or at least to mitigate its evils; but as it is beyond the corporate limits of the city, and just across the county line, it is out of the jurisdiction of both the city and county officials: and as Portland and Multnomah Co. were the chief sufferers, the officers of the county in which the house was located, after the manner of some officials, preserved themselves in peace and official blindness.

At ten o'clock on the morning of the day which our young Governor had announced as the opening of the war, he appeared at the Milwaukee Inn, with a company of about fifty carefully picked men of the Oregon militia; and after reading a military proclamation to the proprietor, reciting in clearcut language the unlawful character of the place, warning all persons against frequenting it, he took charge of the establishment. There was placed at

clear that he was guilty of *any thing*. The sheriff was on hand, but he declared himself helpless. Without question it was the work of *liquors*, shipped in to dry territory.

the gates a guard sufficiently large to enforce the martial order which was affixed to the door. Governor West states it is his fixed purpose to proceed against other roadhouses and liquor concerns, saying "I do not care who is responsible for conditions; they have got to obey the law. It makes no difference whether it hits the big breweries or the lessees; they have got to be good, or they will see their finish before I get through with them."

Being questioned recently as to his right to invoke martial law, he replied that no one doubted his right to call out the militia to protect property against lawlessness, and he considered the children of the State as valuable assets as houses and stocks, and he proposed to test his right to give them the protection derelict officers had failed to give. What the next move will be one can not tell; but our governor is aroused; he is made of stern stuff; he will have the support of good men and women, and, so far as we can decide, he has the law on his side. It is needless to say we will keep *The Union Signal* informed as to the progress of this war.

May the Lord be praised that we have at least *one* governor who is not a *coward*, and afraid of the liquor men. If we could have this man or such a man for President of the United States I should begin to think the millennium was at hand.

Health Notes

FERMENTED MILK; ALSO SOMETHING IN REGARD TO MILK AS A HEALTHFUL FOOD.

A good friend of GLEANINGS has placed in my hands a pamphlet of 30 pages, from the Department of Agriculture, entitled "Fermented Milk." It discusses buttermilk, lactose, yoghurt, kumiss, kefir, etc. It is well known that the people of Russia, Turkey, and other northern European countries, have for ages lived largely on fermented milk. Many of those who live to be a hundred years old or more have been in the habit of subsisting largely on various preparations in the line of fermented milk.

There are many valuable hints and suggestions in this bulletin; and I am glad to know that public attention here in our country is turned toward having buttermilk and various other productions from milk take the place of beer and other intoxicating liquors. God speed the day when good nourishing health-giving milk shall take the place of intoxicants.

This pamphlet calls attention to the fact that it is not every one who can use milk largely; and many people at times find it better to cut off milk for a time. That has been my case for years. After drinking milk freely at meals for a month or two I often find it does not agree with me; but after a spell I can take it again all right. I believe there is a general agreement, too, that buttermilk or fermented milk in some form is more wholesome, as a rule, at least with many people, than rich fresh milk. I wish to emphasize one thing that is very

clear and plain to me; and I think the same will be true with most people. Neither milk, ice cream, nor any thing else, should be taken between meals. Even a little fruit in hot weather, while all right during meal time, makes disturbance if taken between meals. When you feel a hankering for fruit, especially during these hot summer days, drink a good lot of soft pure water and you will soon forget the craving for fruit; it is very much better for *me* to eat all my fruit at the time of my "fruit supper," about five in the afternoon. At this time I eat all the fruit I care for, of various kinds, and it causes no disturbance whatever. Nature seems to have caught on to the program, and plans regularly for it day after day. Of course, no milk is used with my fruit. I take the milk in the morning and at noon.

After the above was in type we received the following from the friend who sent us the pamphlet mentioned:

It seems to me that in your list of simple foods which you recommend there is one or perhaps two that might very appropriately be added. One of these is the old-fashioned "clabber" of our grandparents. This, when well made from pure unskimmed milk, and thoroughly cooled, makes as refreshing and wholesome a dish as one bent on simple living could well ask for. To be sure, individual tastes differ, and what may be acceptable to one may not meet the requirements of another. While there is little doubt that clabber rightly made is a very good thing for those who relish it, it would be hard to conceive of any thing much more dangerous than the product one would get by attempting to make it with contaminated milk. It is, therefore, very necessary to know at the start that the milk is pure. It should also be borne in mind that acid fruits, apples, cherries, etc., are things to be omitted at the time curdled milk is eaten.

Another wholesome and simple food is the curd obtained by using rennet, and flavored to suit one's liking. Often this will be relished by those who can not take the soured curd.

May be I should add that, in making the clabber, the milk is first brought to the scalding-point, but not allowed to boil. It is then cooled to about 90 degrees F., and the starter is added. The milk is then kept warm until the curd has formed. It should then be immediately cooled, when it is ready for use. The starter may be obtained by using a small quantity of fresh skimmed milk (half a pint). This must also be scalded, and allowed to cool and sour. Whole milk makes the most palatable clabber; but the starter should contain as little cream as possible.

I trust you will not overlook the importance of mentioning the fact that fermented milk and fruits taken at the same time may bring about serious digestive disturbance with some people.

Alkin, Md., July 13. J. FORD SEMPERS.

NOSTRUMS AND QUACKERY.

On page 19 of the advertising department of our previous issue I spoke of fraudulent medicines. Well, this same medical association has placed in my hands several pamphlets exposing fake cures for drunkenness, the tobacco habit, obesity, consumption, etc. It is bad enough to "rob sick people" in general; but when you come to robbing the drunkard or drunkard's wife by systematic robbery, how can one well find words to express his disgust and indignation? I have for some time been suspicious of these "cures" for the rum and tobacco habit; and several of our readers who have followed them up have written us the results. If the tablets that are sent free of charge have any effect on the poor victim of tobacco or drink it is by giving him morphine, cocaine, or some other habit-forming drug that is worse, if possible, than tobacco or alcohol. Most of these schemes are advertised by some good woman(?) whose husband or brother or other relative has been cured. She pays the expense of advertising out of her love for humanity, and tells people who respond to her advertisement to send to some great doctor in Chicago. The thing is skillfully worked up so as to entrap the friends of the poor victim, and get them to scrape up their hard earnings to send to the "great medicine man." The cure for obesity is \$25.00; but, like the memory school I have mentioned, if the victim does not "bite" they come down to \$15.00; a little later to \$10.00, and finally you can get the whole thing for \$2.00—that is, if you hold back and do not bite right away. These quacks, as you will notice, make a specialty of curing diseases that are beyond the skill of our best doctors—cancers, consumption, epilepsy, etc. I am sorry to know that these rascals are usually punished by fines only, which they can generally pay and go on with their swindling. If our health commission would add imprisonment, and give

them a good long term, it would cure *them*, for a time at least, of *their* pernicious habits of robbing sick people.

Just a word in regard to the medicines sent free of charge. As a matter of course, these give temporary relief. Cocaine, morphine, or a headache cure usually makes you feel better; but for that matter so does a little whisky; but who would think of resorting to whisky every time he feels bad? or who would expect any permanent relief from such a course? When you are cured of any of these troubles by letting nature do the work, as *Terry* directs, then you have accomplished something; but I confess I am gradually coming over to the decision that medicines and the stuffs you buy at the drugstores seldom really *cure* any thing.

ROBBING SICK PEOPLE; "OXYPATHY" AS A REMEDY FOR DIABETES, PARALYSIS, ETC.

Mr. A. I. Root:—I thank you with all my heart, my Christian friend, for the advice you so kindly gave in regard to my husband's health (you may remember my writing to you in Florida about his sufferings from diabetes); and I feel sure that our prayers have been heard and answered, for he has been able to work right along, and at least seems to be holding his own. Circumstances have, however, been such that I could not keep him strictly to the diet you advised. His mother was lately restored to health (as she believes) from a threatened attack of paralysis by use of an "oxypathor," and she thinks it is the veritable cure—all it is claimed to be. I offered to give them a 60-day note (with the money deposited in a local bank) for their instrument, with the understanding that, if my husband's health improved while using their instrument, they could collect the money; if not, we'd return their oxypathor and stop payment of note. They didn't send one on those terms. So I was afraid to invest. As your experience and skill in detecting frauds is far greater than mine, I enclose some of their advertising matter for your inspection, if you have time, and would greatly appreciate your opinion as to the worth of this (to me) new contrivance.

FANNIE M. FEREBEE.

Ridgeland, S. C., July 5.

My good friend, I am glad you wrote me before wasting your money on what you call a "new contrivance." On the contrary, GLEANINGS has been fighting this same fraud for more than twenty years. See last issue. I notice by the circulars you send, that, instead of the old price of \$25.00, they have now got it to \$35.00, when 35 cents ought to pay for the whole outfit if it were of any real benefit to anybody.

Let me remind you of another thing *besides* wasting money and "robbing sick people." Some years ago our good friend Prof. Cook informed me that his father lost his life by depending on patent-medicine quackery. He was afflicted with a malady that could easily have been managed if taken in time; but instead of going to a physician (or to his *own son*) he trifled with some senseless remedy until he was past help. Most sick people are better at times; and if these times of improvement

happen after they have taken some patent medicine, or "treatment" of some sort they jump to the conclusion that it was the senseless toy that conferred the benefit, and hence these testimonials—that is, testimonials that are not really manufactured. Years ago electropoise, oxydonor, etc., claimed to have "testimonials" from one hundred ministers. The thing has gone down and out of sight several times, only to be resurrected (perhaps under a new name) by some conscienceless rascal or set of rascals.

SOMETHING ABOUT DR. TANNER; FASTING AS WELL AS BEE-STINGS AS A CURE FOR RHEUMATISM.

Mr. A. I. Root:—In GLEANINGS for Feb. 1 a correspondent asks about stings as a cure for rheumatism, and says he is "ready for something heroic." As you always have a corner for unfortunates in Home talks, perhaps you will publish the enclosed for his benefit, as well as for others who may be afflicted.

Dr. Tanner was lecturing in 1903 on the benefits of a vegetarian diet, which he advocated. One lecture was "The Story of the Fast," delivered in Blanchard Hall, Los Angeles, California. I wish I could give the whole of that most interesting and amusing story. Young people, and even the middle-aged, are strangely ignorant of this feat that once filled the civilized world with wonder. They even say coolly that it was not proved he ate nothing in all that time. There are a few left who know. Perhaps you could tell us more about the doctor.

The following is condensed from a lecture by Dr. Tanner:

The doctor was practicing in a town in Ohio about 1870. He was disabled by rheumatism in 1875. Then he went to Minnesota, where he had a friend who was also a physician. This man told him that his heart was in a very bad shape—it might stop beating at any moment. He had pain in the region of the heart—could not lie down.

Tanner went home, very much cast down by his sentence. He sat down in his chair, and paid no heed to any thing. He was not ready to die. He had no thought of food. At the end of five days he accidentally discovered that he could lie down.

The thought came instantly that improvement came from fasting. He then fasted six days more. He felt better, and went to see his doctor, who was very much astonished. "Why, man," said he, "you are cured. Your heart is all right. What have you done?" The cure astonished him still more. Said he, "Ten days is the limit. You have fasted eleven days."

But Dr. Tanner thought the cure might not be permanent. He went home, staying alone in his rooms, and went on fasting, until it was forty-two days.

He went again to see his doctor, and told him. The amazed man was for doing something immediately. "This," said he, "must be sent to the medical journal."

"No," said Dr. Tanner, "you must not publish that. People would not believe it."

The friend respected his wish, but told another doctor, who, without permission, published the case in a medical journal.

"Then," said Tanner. "I was made to suffer. I was told even to my face that I had lied." (He was then selling real estate in Minnesota). "My customers left me, and church members turned their faces away." But there was one consolation. "I have never had rheumatism since," said the doctor.

A year or two later (in 1877) a New York paper came out with a story of a young lady who, in a trance state, had fasted several weeks. (I can not recall how long. Doctors discussed the subject, many saying it could not be true. Dr. Tanner offered to come to New York and fast, under surveillance, forty days, for one thousand dollars. This was offered by Dr. Hamilton at the Medical College.

After a while it was arranged, and Dr. Tanner went to New York and made his famous fast.

LOUISE S. Z. BEMIS.

Cattaraugus, N. Y., Feb. 8.

My good friend, Dr. Tanner, was a *Medina Co.* boy, and he was back to his Medina home several times before he died. There is no question in regard to the authenticity of his statements, and I believe he really was the first man living to demonstrate that some people can actually live "forty days" without food. Since then many people have taken it up, and, I think, generally with benefit, although a very few who are, perhaps, not fitted for such experiments, have been injured by fasting. I believe one person lost his life that way. In our back numbers there have been many reports in regard to it. Upton Sinclair is at present, or at least was until quite recently, the strongest exponent and defender. The periodical *Good Health* for May condemns it in the strongest terms. But they may be extreme in this as well as in some other things. I have frequently gone without food for 24 hours, and I am ready to do it again when nature seems to demand it. I have not yet tried a longer fast. I have not a doubt that it would cure rheumatism and, in fact, almost anything else, if the patient has the grit and backbone to avoid declaring "the remedy worse than the disease."

BETTER THAN FINDING A GOLD-MINE.

We take pleasure in giving place to the following, clipped from the *Practical Farmer*, inasmuch as it comes from a beekeeper and a reader of GLEANINGS:

IF YOU ARE NOT ENTIRELY WELL, PLEASE READ THIS.

A certain doctor said to the writer: "Terry, why do you confine yourself so closely to your study and work so hard? You don't need to; you have property enough. Why not make your life easier now?" My good friends, do you want to know why I do not follow his advice? Then please read the following letter. What is my pleasure, or my little life, worth by the side of being helpful in thousands of homes scattered all over America? This is from Joseph H. Peterson, Ogden, Utah: "I am a beekeeper, and received your book about 18 months ago as a premium with GLEANINGS. Then I subscribed for *The Practical Farmer*. To me this was better than finding a gold-mine. I am 34 years of age, and had suffered for years with chronic constipation and attendant ills, such as stomach trouble, piles, and countless wretched headaches. I ran the course of pills and laxatives, and was taking regularly two injections daily when I got your book. And even if the doctor did tell me I would have to take physic the rest of my life, I now have two and three natural bowel movements daily. Of course, my other ills are going too. Even my threatened baldness is being frustrated since I learned how to live. I am happy to be on the highway of health again. The sun shines brighter, the birds sing sweeter, and my blighted hopes are budding out again, as does all nature at the return of spring. I was ill in body, dejected in spirits, and, while I had not lost hope, I was fast letting go my hold on the things and ambitions of life. But I thank you for making plain the simple laws of health, for now I can renew my hopes and ambitions and feel again the vigor of youth and sing with a thankful heart, "Praise God, from whom all blessings flow." No living man

could write such words unless he had pure blood coursing through his arteries once more, and was feeling the thrill of joyous health. With such health it is a real pleasure to breathe, eat, sleep, work. We greatly like the tone of this letter. The writer thanks us for making plain the simple laws of health, which is all we can do, and praises God from whom all blessing flow. How true, "He heal-eth all our diseases" through his natural agencies of air, water, sleep, food, exercise, etc. We thank friend Peterson most heartily for the trouble he took in sending this report. It certainly will be helpful to some who read it. And we feel under deep obligations to The A. I. Root Co., publishers of GLEANINGS IN BEE CULTURE. They are spreading our efforts far and wide. May it prove "better than finding a gold-mine" to every one of their readers.

If our friend Terry had something to *sell* we might take such extravagant words with a grain of salt; but, may the Lord be praised, he does not advise any medicine whatever—simply nature's agencies, as he expresses it, which are as free as the air we breathe.

POKEWEED FOR GREENS—SEE P. 389,

JUNE 15.

A subscriber sends us the following:

TWO GIRLS DIE OF POISONING.

Miss Lavie Henshaw, 16 years old, and Miss Sallie Pierce, 14 years old, died at Durwood, Ok., May 12, after they had eaten wild greens that contained leaves of the poke plant.

Three other members of the Henshaw family were stricken, but are recovering.—*St. Louis Republic*.

Now, it may be that pokeweed is poisonous, especially if cut down close to the root; but I am loath to believe it. Did not those girls, in their search for "wild greens," get hold of some other plant that was poisonous? From the quantity we gathered at different times down in our Florida home, without the least unpleasant symptom, however, after eating it, I can hardly understand it, unless there is some other plant that goes by the same name. At any rate, it is always wise to take a little at first of something you are not used to, or not very well acquainted with. This is especially true in gathering mushrooms as well as plants for "greens."

CHUFAS.

On page 388, June 15, I spoke about writing to Mr. Hastings in regard to the statement of growing 1000 bushels of chufas to the acre. Below is his reply in regard to the matter:

Mr. A. I. Root:—We have your favor making inquiry as to chufas, and would say that the writer can not give the exact data from which this 1000-bushel figure came; but he is under the impression that it was a test yield with one of the Southern experiment stations several years ago. The statement has been current in Southern seed catalogs for years, but the origin of it is lost. We are aware that 1000 bushels per acre of chufas would be an enormous yield, but we do not consider it an impossibility. There have been yields of potatoes approximating 1000 bushels to the acre, and the writer has personal knowledge of one crop of onions in Texas some five or six years ago that went slightly over 1000 bushels by weight; and under an intensive system of culture there is no reason why chufas should not make an equally high yield.

Atlanta, Ga., June 6.

H. G. HASTINGS.

As the above makes reference to the Southern experiment stations I have written our Florida station to learn if they have tested chufas. I presume there *have* been yields of potatoes (on small areas) approaching 1000 bushels per acre; but contrast the difference, please, between potatoes and chufas. In order to get any thing like this result the chufas would have to be 15 inches apart in rows 2 feet apart, and each plant would have to give at least two quarts of nuts.

CHUFAS AS A SUBSTITUTE FOR COFFEE.

Now, after finding so much fault I have something pleasant to tell our readers—at least those who have been testing chufas. A periodical published in the Everglades, in telling the wonderful things that can be grown there, mentioned chufas; and, while they are very valuable for pigs, poultry, food, etc., it is stated they make excellent *coffee*. I at once ground up some roasted chufas in a coffee-mill—the kind I have written about. I would remark here that they were baked or roasted in the oven, and it was one of my happy surprises when I tasted that chufa coffee. Huber happened to come in at the time, and we gave him a cup to sample. His first exclamation was that it tasted like *malted milk*. Now, malted milk is one of the staple foods for invalids or anybody who has weak digestion; but it is rather expensive.

Just here let us consider the point that vegetarians (and among them our good friend T. B. Terry) have been for some time suggesting that nuts are an excellent substitute for meat or animal food; and right here we have it—a substitute for milk that is *entirely* vegetable, and I am sure it must be nourishing, and it certainly will be far cheaper than any sort of stimulating nerve-racking real coffee—even cheaper than "postum cereal;" and if we could raise 100 bushels to the acre (to say nothing of 1000), it would be cheaper than Terry's wheat coffee. The chufas should be roasted just about as you would peanuts, may be a little more, and then grind them in a coffee-mill, and use one or two heaping tablespoonfuls, say for five or six cups of coffee.

Later.—Here is something from the Florida Experiment Station in regard to chufas:

Dear Mr. Root:—We have grown chufas from time to time at the Florida Experiment Station, and do not consider them the best thing possible for hog feed or for cropping purposes. I think the claim of one thousand bushels an acre for chufas is entirely unreasonable. I did not see Hastings' statement to this effect.

We should be very glad to raise 100 bushels per acre on the average. As a matter of fact, very few farmers in Florida claim more than 75 or 80. Once in a while we hear a man claiming to raise a hundred bushels or over; but these are farmers who

have made a bare estimate on what the crop would be if it were all like a portion of an acre that they have dug.

Some newspaper articles have been going the rounds giving a yield of something like two hundred bushels of chufas to the acre. I can not say just how these results were obtained, as it is quite impossible to follow up even a small percentage of these reports of extremely large yields.

So far as the printed matter from the Florida Experiment Station is concerned, it has been extremely mute on the question of chufas. I can not understand, therefore, to what Mr. Hastings referred when he states that they are highly recommended by the Florida Experiment Station.

Gainesville, Fla., June 15. P. H. ROLFS.

Well, friends, how does the above compare with Hastings' advertisement in his catalog and in our farm papers, of 1000 bushels per acre? By the way, would it not be a grand plan if our different experiment stations would scan the seed catalogs each year, and call down extravagant and misleading advertisements? See page 388, June 15.

REDBUGS; MORE ABOUT THEM.

I saw an article in GLEANINGS (p. 769, Dec. 15) on redbugs that is overdone. I have lived in Ohio, Illinois, and now in Texas nearly four years, and redbugs are *not everywhere* in Texas; and I think likely it is a mistake that they rear any offspring in flesh. Grease helps somewhat, but often fails completely to be of any benefit whatever; but if you use grease beforehand, all right.

I know several native Texans who are just as susceptible as myself to redbugs, poison oak, cowage, and vine poison. I am immune just so long as I stay away from them. Some people have an idea that Texas is what Sheridan said war was, which is a mistaken idea.

Bloomington, Texas, Dec. 26. L. A. CAMERON.

I think very likely the above is correct. During the past winter we were so free from any annoyance from redbugs and other insects that I was inclined to think they were disappearing or that we were becoming immune; but along in March and April, after the rains had ceased that we had been having quite freely all winter, the redbugs came back, and I think they were about as bad as I ever saw them. A few days ago I happened to ask my neighbor Rood if *they* were troubled with redbugs. He replied that they had not been troubled at all, and added that, if we would clear off the scrub palmetto from our ground, as he had from his whole farm, we would have no more redbugs. I think this is probably true; but in caring for my ducks and chickens it is almost impossible for me to keep from brushing the palmettos more or less. And, by the way, I am greatly inclined to think that the greatest part of our troubles are from poisonous vegetation such as the writer mentions in the above. I am sure it is true, because I have had at times a breaking-out that nearly covers my body, something like what we used to call "hives" here in the North, during hot summer weather. Redbugs are bad enough; but I do not believe they are the cause of *all* this breaking-out and itching. The lady writer

in our issue of Dec. 15, referred to, thinks that, when these bugs get a foothold, they may remain for two weeks. This, certainly, is a mistake, I think; for when we come back North all annoyance ceases in two or three days. It is a week to-day (April 23) since I left Florida, and I can say that almost all traces of redbugs have disappeared entirely. Perhaps I should add that people who live in towns and do not go out into the woods are seldom troubled with any of these pests.

SELLING RECIPES FOR DOING THINGS, ETC.

One of our subscribers sends us the advertisement below, which he clipped from the *Mississippi Commercial Appeal*:

Send \$1.00 to-day for recipe to make gallon good honey for 50c without bees. May not appear again. W. J. Green, Rienzi, Miss.

Of course we have wasted many dollars in times past in sending for recipes; but here goes one more.

After five days comes the recipe as follows:

One and a half pounds of bees' honey; six pounds light brown sugar; one and a half pints water; two ounces cream of tartar.

Dissolve cream of tartar in a little water, then put all articles together and boil in a copper vessel until well mixed, usually twelve to fifteen minutes; stir while boiling; skim off froth that arises while boiling, which eats well. Now ready for use, but improves with age.

Can make again, using what you have made instead of honey.

Here is the letter accompanying it:

Mr. Root:—Your letter containing \$1.00 came to hand, and is duly noted. Enclosed find receipt for making one gallon honey without bees. You will make as nice honey as you ever eat. The longer it stands, that is, the older it gets—the better it is. Thanking you for the order, I am yours truly, Rienzi, Miss., May 15. W. J. GREEN.

In the first place, it is practically the same old recipe that was in the papers at least forty years ago. Second, he claims to make honey without bees, and yet it takes a pretty good dose of *bees' honey* to make the stuff. We are glad that such things now are not as common as they used to be; but I am going to submit this whole matter to the proper authorities, and ask them if this man is not making a fraudulent use of the mails.

PARCELS POST CHEAPER TO FOREIGN COUNTRIES THAN TO OUR NEXT-DOOR NEIGHBORS.

I clip the following from the *Rural New-Yorker*; and after you have read it I hope you will do something more than to "think and think and think."

Going through the busy corridors of the New York postoffice one sees a placard announcing in large black letters, "Parcels post to foreign countries, 12 cents a pound." And then the meek American citizen affixes 16 cents to a pound of merchandise for transmission through domestic mails, and thinks and thinks and thinks!

POULTRY DEPARTMENT

WHITE ORPINGTONS—A REPORT FROM SEVEN PULLETS.

Dear Brother Root:—I am inclosing a record of my first pen of White Orpingtons. I think it is not very far behind the best; but I should be pleased to see your comment on it, if you can conscientiously do so.

At the time these pullets were commencing to lay, it was from 20 to 24 degrees below zero. In January I received 97 eggs from the five oldest. I intend to make egg-production a study and a business.

White Orpingtons—number of eggs laid:

Hatched		At 1 yr. old	To July 14, 1912	1st egg laid
5-26-1911	Queen,	65	89	12-27-11
"	*Edina,	109	139	1-4-12
"	Diana,	71	89	1-5-12
"	Mamie	61	80	1-6-12
"	Juliette,	60	82	1-9-12
6-26-11	Red Wing	55	57	1-30-12
"	*Beauty,	123	132	1-30-12
"	*Annabel,	105	119	1-31-12
"	Bunch,	40	52	1-11-12
Total,		689	839	
	*Edina, Beauty, Annabel,	337	390	

These last are the three best layers in the above record. Edina and Beauty never went to sitting until June 26, and Annabel July 14. Beauty missed only one day, May 8, from April 23 to May 22 inclusive.

Juliette became crop-bound, and was sick two months. The other five hatched out two settings of eggs each.

Brunswick, Mo., July 15.

FRANK SMUTZ.

We have given the above, not because there is any thing particularly remarkable about it, but rather because our friend had his pullets all named; and he knows just when each pullet commenced to lay and how many eggs she laid up to a given time. I suppose that the seven were trap-nested, although he does not say so. The whole seven commenced laying when about six months old, and during a time of severe zero weather. I rather think this lot did better, because they had extra care and attention. Each one having a name would indicate it. Now a point comes in right here: Shall this friend save his eggs from the best pullet? I believe the general tendency is, from the best authority, to say no; but instead of taking eggs from the best layers, get the eggs from the *mother* of this great layer. If the mother produced one Edina layer she could probably produce more. This same thing applies to bee culture—rear queens from the *mother* of the queen whose bees gave a great crop of honey, rather than from the queen herself. And this mode of procedure indicates *why* we can pay a big price for tested breeders, either queen bees or mother hens. One thing more:

When you get hold of a fowl that has given you pullets with big records, you should keep that fowl for a breeder, no

matter how old she is. Even if she is so old that she lays only a few eggs, if these eggs have proven season after season to produce pullets that are great layers, hold on to her.

TESTING EGGS BEFORE THEY ARE PUT INTO AN INCUBATOR, ETC.

We clip the following from an editorial in *Poultry Topics* for July:

By testing the eggs before placing them under the hen in the incubator, the farmer can increase the percentage of eggs hatched. In many cases this percentage can almost be doubled.

We have usually found *Poultry Topics* to be a very steady and reliable journal; but the above perplexes me exceedingly; and the more I study it the more I am troubled about it—first, has the editor of *Poultry Topics* been in the habit of keeping a *hen* in his incubator? second, does he mean to tell us that “the farmer” or anybody else, for that matter, can sort out the unfertile eggs before giving them, say three days or more, to a sitting hen, or placing them in an incubator? I know there are at least two persons who have advertised in the poultry journals that they could teach how to sort out the unfertile eggs *before* giving them either to the hen or to the incubator. If I am correct, the magic egg-tester makes some such claim; but I am ready to pay \$100 for any process that will succeed as above at any experiment station. The egg-tester simply gives the specific gravity of the egg; and they claim the heaviest eggs hatch the best chickens. Now, even if this is true, the specific gravity of an egg has nothing to do with its being fertile or unfertile. This I have tested to my satisfaction.

A KIND WORD FROM ONE OF OUR MISSIONARIES.

Mr. A. I. Root:—Time has again brought around one pleasant duty of the moment, which is to thank you, as senior partner in your firm, for your continued kindness to me in the matter of sending me GLEANINGS for the past 12 months, and which is as much appreciated as it ever was.

The swing of the pendulum, I observe, has occurred in your country, and some State legislation has taken place not promotive of temperance. It was the effect I was fearing. Great success in big movements seems always to be followed by some setback; yet the movement is not overthrown.

In this little island, drunkenness is not in fashion, and one may live and move about in it for months without seeing a person the worse for liquor except at such times as fleets visit us, when it seems to me *English marines* take a disgraceful first among the nations represented.

Trusting that many years of usefulness may lie before you in God's cause, and with my best wishes to you and Mrs. Root for a happy 1912, I remain,

W. A. HUTCHINSON.

St. Joseph's Rectory, Barbados, W. I., Dec. 30,